

LÍGIA CRISTELLI DA PAIXÃO

**ANÁLISE NACIONAL DAS TELECONSULTORIAS ASSÍNCRONAS
DO TELESSAÚDE**

**Faculdade de Odontologia
Universidade Federal de Minas Gerais
Belo Horizonte
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LÍGIA CRISTELLI DA PAIXÃO

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DO TELESSAÚDE**

Tese apresentada ao Colegiado de Pós-Graduação em Odontologia da Faculdade de Odontologia da Universidade Federal de Minas Gerais, como requisito parcial à obtenção do grau de Doutora em Odontologia - área de concentração em Endodontia.

Orientador: Prof.(a): Dra. Renata de Castro Martins

Coorientador: Prof: Dr. Antônio Paulino Ribeiro Sobrinho

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ANÁLISE NACIONAL DAS TELECONSULTORIAS ASSÍNCRONAS DO TELESSAÚDE

LÚCIA CRISTELLI DA PAIXÃO

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RESUMO

O Programa Telessaúde Brasil Redes foi implantado no Brasil pelo Ministério da Saúde em 2006. Estudos têm mostrado que o Programa contribui para o aumento da qualidade dos serviços de saúde, contudo, ainda não foi realizada uma avaliação nacional das teleconsultorias odontológicas. Este estudo avaliou nacionalmente as teleconsultorias odontológicas assíncronas do Programa Nacional Telessaúde Brasil Redes em 2019 e 2020 e foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Federal de Minas Gerais, CAAE 17400319.9.0000.5149. Dados secundários foram extraídos do Sistema de Monitoramento e Avaliação dos Resultados do Programa Telessaúde. Coletou-se as variáveis: macrorregião e município da teleconsultoria, sexo e especialidade do solicitante, data e horário da pergunta e resposta, tempo até a resposta, satisfação dos profissionais e se a teleconsultoria evitou o encaminhamento. As áreas odontológicas das teleconsultorias foram categorizadas por Código Internacional de Doenças e Classificação Internacional da Atenção Primária 2 informados no sistema. As macrorregiões e municípios foram caracterizados socioeconomicamente. Nesse documento serão apresentados os 03 artigos desenvolvidos: O Artigo 1, foi um estudo transversal que compreendeu todas as variáveis individuais do estudo; sobre as teleconsultorias e macrorregiões do país em 2019. Um total de 3387 teleconsultorias foram realizadas, com a maior demanda da macrorregião Sudeste (45,3%). A maioria dos dentistas eram mulheres (60,3%), da especialidade Cirurgião-Dentista da Estratégia de Saúde da Família (57,4%). A maioria das teleconsultorias foi solicitada durante o horário de trabalho (85,4%) e devolvida em até 72 horas (63,9%). Observou-se 70,8% de satisfação e 70,2% de encaminhamentos evitados pelas teleconsultorias, entre os dentistas que responderam estas questões. Clínica odontológica foi a área com maior demanda de teleconsultorias (35,1%). As diferentes demandas das regiões refletem as diferenças regionais existentes. Profissionais incorporaram as teleconsultorias em sua rotina de trabalho e as teleconsultorias têm sido respondidas dentro do tempo estipulado. O *feedback* dos profissionais deve ser estimulado. O Artigo 2 analisou os fatores associados à satisfação dos profissionais com as teleconsultorias em 2020. A associação entre a variável dependente e independentes foi testada por meio de modelos de regressão logística binária. Observou-se 26,7% de satisfação. Houve associação entre “encaminhamento evitado” (OR 1.55; 95%CI 1.17-2.04; $p=0.002$) e “área de estomatologia” (OR 0.61; 95%CI 0.43-0.87; $p=0.006$) com a satisfação dos profissionais. Dentistas apresentaram baixa satisfação com as teleconsultorias. Profissionais que relataram que a teleconsultoria evitou o encaminhamento apresentaram maior chance de estarem satisfeitos com a resposta. Dentistas que enviaram dúvidas de estomatologia ficaram significativamente menos satisfeitos com a teleconsultoria. O Artigo 3 analisou os fatores associados com o “encaminhamento evitado” dos pacientes após a teleconsultoria por meio de uma análise multinível. 65,1% das teleconsultorias evitou o encaminhamento de pacientes. Dentistas do sexo feminino (OR=1.74; CI=0.99-3.44; $p=0.055$) e municípios com maior cobertura de Equipes de Saúde Bucal (OR=1.01; CI=1.00-1.02; $p=0.02$) apresentaram maior chance de evitar o encaminhamento. Variáveis contextuais explicaram parte da variabilidade na prevalência de encaminhamentos evitados. É necessário o estímulo

pelo governo sobre o uso e *feedback* das ferramentas do Telessaúde para melhor entendimento de seu impacto como suporte à Atenção Primária à Saúde.

Palavras-chave: Teleodontologia. Serviços de Telessaúde. Atenção Primária à Saúde. COVID-19.

ABSTRACT

National Analysis of asynchronous teleconsulting of the Brazilian Telehealth Program

The Telehealth Brazil Networks Program was implemented in Brazil by an initiative from Ministry of Health in 2006. Studies have shown that the Program improves the quality of care, however, a national evaluation of dental teleconsulting has not yet been carried out. This study nationally evaluated the asynchronous dental teleconsulting of the Telehealth Brazil Networks Program in the period of 2019 and 2020 and was approved by the Research Ethics Committee of the Universidade Federal de Minas Gerais, CAAE 17400319.9.0000.5149. Secondary data were extracted from the Monitoring and Evaluation System of the Results of the Telehealth Program. The following variables were collected: macro-region and municipality of the requested teleconsulting; dentist's sex and specialty; date/time of question and answer; time until teleconsulting answer; professional satisfaction and whether the teleconsulting avoided patient referral. The dental fields of the teleconsulting sessions were categorized as per International Code of Diseases and International Classification of Primary Care 2 informed at the system. The macro-regions and municipalities were socioeconomically characterized. In this document, three articles will be presented: Article 1 was a cross-sectional study that included all the individual variables of the study; on teleconsulting and macro-regions in the country in 2019. A total of 3,387 teleconsulting sessions were carried out, with the highest demand from Southeast macro-region (45.3%). Most dentists were female (60.3%) and from dental surgeons of the Family Health Strategy (57.4%). Most teleconsultings were requested during working hours (85.4%) and answered within 72 hours (63.9%). 70.8% of professional satisfaction and 70.2% of avoided referrals were observed between professionals who answered that question. The dental clinic was the dental field with the highest demand for teleconsulting (35.1%). Regions had different demands because of regional differences. Professionals have incorporated teleconsulting into their work routine and teleconsultings have been returned within the stipulated time. Feedback from professionals should be encouraged. Article 2 analyzed the associated factors with the professional satisfaction with teleconsulting sessions in 2020. The association between the dependent and independent variables was tested by binary logistic regression models. 26.7% of professional satisfaction was observed. There was an association between "avoided referral" (OR 1.55; 95%CI 1.17-2.04; $p=0.002$) and "stomatology area" (OR 0.61; 95%CI 0.43-0.87; $p=0.006$) with the professional satisfaction. Dentists showed low satisfaction with teleconsulting sessions. The professionals who reported that teleconsulting avoided patient referral were more likely to be satisfied with teleconsulting. Dentists who sent stomatology questions were significantly less satisfied with the teleconsulting. Article 3 analyzed the associated factors with the "avoided referral" of patients by teleconsulting through a multilevel analysis. Teleconsulting sessions avoided patient referral to other care levels in 65.1%. Female dentists (OR=1.74; CI=0.99-3.44; $p=0.055$) and municipalities with greater coverage of Oral Health Teams (OR=1.01; CI=1.00-1.02; $p=0.02$) were more likely to avoid referral. Contextual variables explained part of the variability in the prevalence of avoided referrals. It is necessary the encouragement by the government on the use and feedback of Telehealth tools for a better understanding of their impact as a support to Primary Health Care.

Keywords: Teledentistry. Telehealth services. Primary Health Care. COVID-19.

LISTA DE ABREVIATURAS E SIGLAS

APS	Atenção Primária à Saúde
CEOs	Centros de Especialidades Odontológicas
ESD	Estratégia de Saúde Digital
ESF	Estratégia de Saúde da Família
IDHm	Índice de Desenvolvimento Humano municipal
RNDS	Rede Nacional de Dados em Saúde
SMART	Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde
SOF	Segunda Opinião Formativa
SUS	Sistema Único de Saúde
TIC	Tecnologias de Informação e Comunicação
UBS	Unidades Básicas de Saúde

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1 CONSIDERAÇÕES INICIAIS

O “Telessaúde” é uma ferramenta que favorece a comunicação em saúde por meio da utilização de recursos tecnológicos encurtando as distâncias existentes para profissionais e usuários dos serviços de saúde (DANIEL e KUMAR *et al.*, 2014; REKOW, 2019; CARDOZO *et al.*, 2022). Tais práticas favorecem a educação profissional continuada, dando suporte multidisciplinar ao cuidado dos pacientes, sendo, contemporaneamente, aplicadas em todo o mundo (ABBAS *et al.*, 2020; BRITO *et al.*, 2018; COSTA *et al.*, 2020; DANIEL e KUMAR *et al.*, 2014; MALDONADO *et al.*, 2016).

Quando aplicada à prática médica, o Telessaúde é chamada de Telemedicina, e atua em múltiplos aspectos do cuidado com os pacientes, como, por exemplo, o estabelecimento do diagnóstico, tratamento e prevenção de doenças, além de auxiliar no monitoramento de condições de saúde. Por facilitar a acurácia do diagnóstico contribui para reduzir o tempo da consulta, melhorando a qualidade dos atendimentos e reduzindo custos (ALKMIM *et al.*, 2012; PACHITO *et al.*, 2022). Ademais, apresenta, em geral, boa aceitabilidade por parte dos profissionais e pacientes (IRVING *et al.*, 2017).

A Teleodontologia utiliza as tecnologias da informação em saúde e telecomunicações no cuidado bucal, para o esclarecimento de dúvidas, educação e conscientização pública visando à melhoria dos atendimentos e ampliação do acesso aos serviços pela população (BRITO *et al.*, 2018; DANIEL e KUMAR *et al.*, 2014). Suas aplicações têm crescido, favorecendo o estabelecimento de diagnósticos, tratamento e prevenção de doenças, por meio de comunicações remotas entre pacientes e profissionais da saúde ou entre profissionais. Atividades como webconferências, tele-educação, teletriagem e telemonitoramento (acompanhamento remoto do progresso de tratamentos já em andamento) são utilizadas pela teleodontologia (ABBAS *et al.*, 2020; ALABDULLAH *et al.*, 2018; COSTA *et al.*, 2020; DANIEL e KUMAR *et al.*, 2014). Outra contribuição importante é a capacidade de demonstrar a necessidade de se reorientar recursos públicos para populações com maiores riscos de desenvolvimento de doenças (COSTA *et al.*, 2020).

A teleodontologia permite aos profissionais da saúde melhores condições de trabalho, favorecendo um menor isolamento e a permanência dos mesmos em

localidades isoladas (CAMPOS *et al.*, 2009). Ao proporcionar o contato entre profissionais de diferentes níveis de atenção, promove a articulação entre a Atenção Primária à Saúde (APS) com a atenção secundária, evitando, dessa forma, o deslocamento desnecessário dos usuários, promovendo uma otimização dos recursos em saúde, sem comprometer a qualidade do cuidado (BRASIL, 2015a; GADENZ *et al.*, 2021; IRVING *et al.*, 2017; PACHITO *et al.*, 2022).

O sistema de saúde brasileiro, chamado de Sistema Único de Saúde (SUS), desde 2006 implementou o projeto “Telessaúde” com o intuito de fortalecer e melhorar a resolubilidade da APS e, ao mesmo tempo aumentar o acesso da população aos serviços especializados (ALKMIM *et al.*, 2012; HADDAD *et al.*, 2012). Em 2007, a portaria nº 35 do Ministério da Saúde instituiu o projeto piloto para o Programa, com a implantação inicial de nove núcleos de Telessaúde espalhados pelas regiões brasileiras (BRASIL, 2007). A portaria 402/2010 reconheceu a iniciativa formalmente como o Programa Brasileiro de Telessaúde, sendo expandido e aplicado à atenção primária à saúde (BRASIL, 2010). Posteriormente, a Portaria 2546/2011 redefiniu suas diretrizes e atividades passando a denominá-lo “Programa Nacional Telessaúde Brasil Redes” (BRASIL, 2011a).

Recentemente, em 2019, foi publicado o decreto nº 9.795, que determina o incentivo do Telessaúde no Sistema Único de Saúde (SUS), com a ampliação de sua rede de informação por meio do Departamento de Saúde Digital (BRASIL, 2019a). No ano seguinte, o Ministério da Saúde publicou a Estratégia de Saúde Digital (ESD) para o Brasil para os anos de 2020-2028 (BRASILIA, 2020a). A ESD estabeleceu entre outros aspectos, Diretrizes para o Telessaúde no país, como parte da saúde digital, no âmbito do SUS: ultrapassar barreiras geográficas, socioeconômicas e culturais para permitir que toda a população tenha acesso aos serviços e informações em saúde; buscar maior satisfação do usuário, com maior qualidade do cuidado e redução de custos; reduzir deslocamentos desnecessários e filas de espera por atendimentos especializados (BRASILIA, 2020a).

A pandemia do COVID-19 trouxe novos desafios e destacou a importância do Telessaúde na contribuição ao distanciamento social, evitando os deslocamentos desnecessários dos pacientes por meio de triagem remota (GHAI *et al.*, 2020). Nesse contexto, o Programa Conecte SUS, principal iniciativa da ESD, foi impulsionado para priorizar ações de combate à COVID-19, de acordo com as necessidades nacionais. O compartilhamento de informações entre as unidades de

saúde, profissionais e cidadãos se tornou disponível via Rede Nacional de Dados em Saúde (RNDS). Esta rede permitiu a recepção e integração de notificações de resultados dos exames COVID-19, registros de vacinas aplicadas e a emissão do certificado nacional de vacinação covid-19 (BRASILIA, 2020a).

Dentre as estratégias utilizadas pelo Programa Telessaúde Brasil Redes encontra-se o “telediagnóstico”. Este é o diagnóstico efetuado a distância ou, como definido pelo Ministério da Saúde, serviço “que utiliza as TIC e comunicação para realizar serviços de apoio ao diagnóstico através de distâncias geográfica e temporal” (BRASIL, 2011a). Diferentes exames diagnósticos da área da saúde podem se utilizar das TIC, dependendo da transmissão de sinais biológicos, como sinais elétricos e imagens médicas ou radiológicas. A Segunda Opinião Formativa (SOF) é originada de uma teleconsultoria assíncrona com assuntos relevantes para a APS e considerados de interesse nacional. Foram desenvolvidas com o objetivo de se construir uma ponte entre os serviços de saúde e o conhecimento científico, disponibilizando-o em um novo formato, pronto para ser absorvido pelos profissionais (HADDAD *et al.*, 2015). A SOF busca a qualificação destes profissionais, o aumento da resolutividade dos casos clínicos e processo de trabalho (BRASIL, 2022a; HADDAD *et al.*, 2012). Outra estratégia é a Tele-educação, que conta com a realização de conferências, aulas e cursos, como uma forma de apoio à formação dos trabalhadores do SUS (BRASIL, 2015a; BRASIL, 2022a). Observa-se, pois, que o Telessaúde se revela uma potente ferramenta para a educação continuada dos profissionais de saúde (MARCOLINO *et al.*, 2016).

Como braço essencial na oferta de serviços de telessaúde, inserem-se as teleconsultorias. Nelas, um diálogo entre profissionais e gestores da APS com profissionais especialistas, permite que sejam esclarecidas dúvidas relacionadas ao serviço, aos cuidados clínicos e à promoção de saúde (BRASIL, 2022a). As teleconsultorias podem ocorrer de forma síncrona (tempo real), por mensagens ou videoconferências, ou assíncrona (mensagens *off-line*). Os questionamentos devem ser respondidos em no máximo 72 horas (BRASIL, 2022a; COSTA *et al.*, 2020; HADDAD *et al.*, 2012). Aqueles questionamentos relativos aos cuidados clínicos e à promoção de saúde, visam permitir ao profissional da APS, nas Unidades Básicas de Saúde (UBS), dirimir dúvidas que surjam em sua prática clínica com um teleconsultor. Este é um profissional especializado naquela área de saúde na qual a dúvida foi levantada (BRASIL, 2015a; HADDAD *et al.*, 2015). A legislação

concernente às teleconsultorias em Odontologia permite sua execução entre profissionais da saúde, mas não entre pacientes e profissionais (BRITO *et al.*, 2018). Durante a pandemia do COVID-19, o Conselho Federal de Odontologia, por meio da resolução nº226, excepcionou tal legislação, permitindo o monitoramento remoto de pacientes, já em tratamento odontológico, pelos cirurgiões-dentistas, e a aplicação de questionários pré-clínicos, visando a guiar o melhor momento do atendimento clínico (BRASILIA, 2020b).

As teleconsultorias rompem barreiras geográficas e permitem a troca de informações entre profissionais da saúde por todo o Brasil. Esses serviços são ofertados por diversas unidades de atenção básica do SUS, graças ao Programa Nacional Telessaúde Brasil Redes, por meio dos núcleos técnico-científicos, instituições formadoras e de gestão e/ou serviços de saúde (BRASIL, 2022a). Tanto os núcleos de telessaúde, como os diversos municípios cadastrados no programa, são equipados de forma a garantir a conexão entre eles (BRASIL, 2015a). Por sua vez, algumas barreiras são encontradas na implantação e aderência dos profissionais ao Telessaúde. As limitações tecnológicas, como a baixa velocidade e sinal da conexão de internet, baixa qualidade de imagens geradas nos exames realizados nas UBS e falta de experiência dos profissionais na utilização dos equipamentos para comunicação, contribuem com este problema (SOUZA *et al.*, 2016). Para minimizá-lo, deve-se reforçar a infraestrutura de informática das UBS, a divulgação do serviço e a oferta de treinamento pessoal.

Estudos têm demonstrado que o Telessaúde, por meio das teleconsultorias, evita encaminhamentos desnecessários de pacientes a serviços especializados em 45% a 80% dos casos (BAVARESCO *et al.*, 2020; MARCOLINO *et al.* 2014). Corroborando com estes achados, vários outros demonstram a capacidade do Telessaúde em reduzir o trânsito de pacientes para centros especializados (DINIZ *et al.*, 2016; HARZHEIM *et al.*, 2016; KATZ *et al.*, 2020; PAIXÃO *et al.*, 2018; SANTOS *et al.*, 2019; ZANABONI *et al.*, 2014). Relatos demonstram ainda que profissionais tiveram suas dúvidas sanadas em mais de 70% dos casos (BAVARESCO *et al.*, 2020; MARCOLINO *et al.*, 2014) melhorando a resolutividade da APS. Batista *et al.* (2016) relataram que os encaminhamentos de pacientes ocorrem, muitas vezes, como consequência do despreparo profissional em lidar com o tratamento de condições mais complexas. Tal fato, segundo os autores, leva a superlotação dos serviços de saúde especializados, reduzindo a capacidade de atender novos casos

ou priorizar os mais severos. Dessa forma, ao contribuir com a solução de dúvidas dos profissionais da APS, as teleconsultorias apresentam-se como uma ferramenta de suporte ao sistema de referência e contra-referência (BAVARESCO *et al.*, 2020). Ademais, a validade diagnóstica da Teleodontologia por meio de teleconsultorias e exames de imagens remotos foi avaliada, demonstrando que são considerados válidos, viáveis, e comparáveis ao exame visual tradicional na maioria dos estudos analisados (ALABDULLAH *et al.*, 2018).

Como relatado por Haddad *et al.* (2012), o Programa Telessaúde Brasil Redes é de abrangência nacional e de iniciativa governamental, existindo, pois, uma grande necessidade de avaliá-lo para monitorar a qualidade do cuidado prestado aos cidadãos, evidenciar lacunas presentes em seu processo, estrutura e ou resultado, na busca por aperfeiçoá-lo. É neste contexto que este estudo se insere, ao buscar avaliar nacionalmente as teleconsultorias odontológicas assíncronas do Telessaúde Brasil Redes, determinando os fatores associados à satisfação dos profissionais de saúde da APS, bem como a efetividade do Programa em evitar o encaminhamento desnecessário de pacientes para as unidades de referência.

2 OBJETIVOS

2.1 Objetivo Geral

Avaliar as teleconsultorias enviadas por cirurgiões-dentistas do Telessaúde Brasil Redes no período de 2019 e 2020.

2.2 Objetivos Específicos

- a) Descrever a frequência de teleconsultorias assíncronas do Telessaúde Brasil Redes no ano de 2019 de acordo com o sexo e a especialidade odontológica do solicitante da teleconsultoria; a data e o horário do questionamento e a resposta ao mesmo; o tempo decorrido até a resposta; a área odontológica na qual a dúvida foi suscitada; a satisfação dos solicitantes quanto a resposta recebida; se a teleconsultoria evitou o encaminhamento do paciente para outra unidade de atenção; considerando dados sócio-demográficos e de cobertura das Equipes de Saúde Bucal (ESB) e dos Centros de Especialidades Odontológicas (CEOs), nas diferentes macrorregiões brasileiras de acordo com a demanda por teleconsultorias;
- b) Analisar a associação entre a satisfação dos profissionais da APS com as teleconsultorias assíncronas do Telessaúde Brasil Redes, no ano de 2020, e as variáveis: sexo e especialidade odontológica do solicitante da teleconsultoria; área odontológica da dúvida da teleconsultoria, horário da pergunta e resposta; tempo até a resposta e se a teleconsultoria evitou o encaminhamento do paciente;
- c) Analisar a associação entre o “encaminhamento evitado” de pacientes para o serviço especializado após as teleconsultorias assíncronas do Telessaúde Brasil Redes, no ano de 2020, e as variáveis individuais: sexo e especialidade odontológica do solicitante da teleconsultoria; área odontológica da dúvida da teleconsultoria; e variáveis contextuais dos municípios que solicitaram as teleconsultorias: Índice de Desenvolvimento Humano municipal (IDHm),

cobertura das ESB da APS e CEOs, taxa de analfabetismo, Índice de Gini, longevidade e renda per capita.

3 METODOLOGIA EXPANDIDA

3.1 Delineamento do estudo

Trata-se de um estudo transversal que utilizou banco de dados secundários, referente aos núcleos de telessaúde do Programa Telessaúde Brasil Redes, no período de 2019 e 2020. Os núcleos de telessaúde, responsáveis pela oferta de teleconsultorias, são implantados principalmente em universidades públicas em praticamente todos os estados do Brasil (quadro 1) (BRASIL, 2022b).

Quadro 1 – Núcleos de Telessaúde por macrorregião, estado, *status*, oferta de teleconsultorias e plataforma utilizada, Brasil, 2022b.

Macrorregião/estado	Núcleo de Telessaúde	Status	Oferta de teleconsultorias/Plataforma
<i>Norte</i>			
Acre	Estadual do Acre	Implantado	Próprio/Acre
Amazonas	Estadual do Amazonas	Implantado	Próprio/Amazonas e Pernambuco (UFPE)
Pará	Estadual do Pará	Implantado	Próprio/Rio Grande do Sul
	Intermunicipal de Tucuruí	Suspensão	Próprio/Rio Grande do Sul
Rondônia	Estadual de Rondônia	Implantado	Próprio/Rio Grande do Sul
Roraima	Estadual de Roraima	Implantado	Próprio/Rio Grande do Sul
Tocantins	Estadual do Tocantins	Implantado	Próprio/Tocantins
<i>Nordeste</i>			
Alagoas	Intermunicipal de Arapiraca	Implantado	Próprio/Pernambuco (UFPE)
	Estadual do Alagoas	Em implantação	Próprio/Rio Grande do Sul
Bahia	Intermunicipal de Maceio	Suspensão	Próprio/Rio Grande do Sul
Ceará	Estadual da Bahia	Implantado	Próprio/Bahia
	Estadual do Ceará SES	Implantado	Estadual do Rio Grande do Sul /Rio Grande do Sul
Maranhão	Estadual do Ceará UFC	Implantado	Próprio/Ceará
	Estadual do Maranhão	Implantado	Próprio/Maranhão
	Intermunicipal de Bacabal	Suspensão	Estadual do Maranhão/Rio Grande do Sul
	Intermunicipal de Mata Roma	Suspensão	Estadual do Maranhão/Rio Grande do Sul
	Intermunicipal de Pedreiras	Suspensão	Estadual do Maranhão/Rio Grande do Sul
	Intermunicipal de Santa Inês	Suspensão	Estadual do Maranhão/Rio Grande do Sul
Paraíba	Intermunicipal de João Pessoa	Implantado	Próprio/Pernambuco (UFPE)
Pernambuco	Regional Indígena	Implantado	Próprio/ Regional Indígena
	Intermunicipal de Igarassu	Implantado	-
	Estadual de Pernambuco UFPE	Implantado	Próprio/Pernambuco (UFPE)
	Estadual de Pernambuco SES	Implantado	Próprio/Pernambuco (SES)
	Intermunicipal de Recife	Implantado	Próprio/Pernambuco (UFPE)

	Intermunicipal de Petrolina	Suspensão	Próprio/Rio Grande do Sul
	Intermunicipal de São L. da Mata	Suspensão	-
Piauí	Hospital Universitário da UFPI	Implantado	Próprio/Gestor Saúde
	Intermunicipal de Floriano	Suspensão	Estadual de Minas Gerais (FM/UFMG)/Minas Gerais (FM)
	Estadual do Piauí	Suspensão	Próprio/Rio Grande do Sul
	Intermunicipal de Piripiri	Suspensão	Estadual de Minas Gerais (FM/UFMG)/Minas Gerais (FM)
Rio Grande do Norte	Estadual do Rio Grande do Norte	Implantado	Próprio/Rio Grande do Norte
Sergipe	Estadual de Sergipe	Implantado	Próprio/Pernambuco (UFPE)
<i>Centro-Oeste</i>			
Goiás	Estadual de Goiás	Implantado	Próprio/Goiás
	Intermunicipal de Cristalina	Suspensão	Estadual do Rio Grande do Sul /Rio Grande do Sul
Mato Grosso	Estadual do Mato Grosso	Implantado	Próprio/Rio Grande do Sul
Mato Grosso do Sul	Estadual do Mato Grosso do Sul	Implantado	Próprio/Mato Grosso do Sul e Rio Grande do Sul
Distrito Federal	-	-	-
<i>Sudeste</i>			
Espírito Santo	Estadual do Espírito Santo	Implantado	Próprio/Espírito Santo
Minas Gerais	Intermunicipal de Belo Horizonte	Implantado	Estadual de Minas Gerais (FM/UFMG)/Minas Gerais (FM)
	Intermunicipal de Brumadinho	Implantado	Estadual de Minas Gerais (FM/UFMG)/Minas Gerais (FM)
	Intermunicipal de Contagem	Implantado	Estadual de Minas Gerais (FM/UFMG)/Minas Gerais (FM)
	Estadual de Minas Gerais (FM/UFMG)	Implantado	Próprio/Minas Gerais (FM)
	Estadual de Minas Gerais (HC/UFMG)	Implantado	Próprio/Minas Gerais (HC)
Rio de Janeiro	Intermunicipal de Nova Iguaçu	Implantado	Próprio/Pernambuco (UFPE)
	Estadual do Rio de Janeiro	Implantado	Próprio/Rio de Janeiro
	Intermunicipal de Três Rios	Suspensão	Estadual do Rio de Janeiro/Rio de Janeiro
	Intermunicipal de Volta Redonda	Suspensão	Estadual do Rio de Janeiro/Rio de Janeiro
São Paulo	Estadual de São Paulo (UNIFESP)	Implantado	Próprio/São Paulo(UNIFESP)
	Municipal de São Paulo (SMS)	Em implantação	Próprio/São Paulo SMS
	Intermunicipal de Andradina	Suspensão	Estadual do Rio Grande do Sul/Rio Grande do Sul
	Intermunicipal de São Bernardo do Campo	Suspensão	Estadual do Rio Grande do Sul/Rio Grande do Sul
	Intermunicipal de Garça	Suspensão	Estadual do Rio Grande do Sul/Rio Grande do Sul
<i>Sul</i>			
Paraná	Estadual do Paraná	Implantado	Próprio/Rio Grande do Sul
	Estadual do Paraná (SESA)	Suspensão	-
Rio Grande do Sul	Estadual do Rio Grande do Sul	Implantado	Próprio/Rio Grande do Sul
Santa Catarina	Estadual de Santa Catarina	Implantado	Próprio/Santa Catarina

Fonte: Brasil. Ministério da Saúde. Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde. *Núcleos de Telessaúde*, 2022.

(Houve alteração no formato da tabela para fins didáticos).

3.2 Coleta de dados

Para a coleta de dados utilizou-se o banco de dados nacional do Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde (SMART), que foi desenvolvido em 2014 e integra as informações de serviços prestados pelos Núcleos de Telessaúde que fazem parte do Programa Nacional Telessaúde Brasil Redes (BRASIL, 2018). O acesso às informações foi solicitado ao responsável pela guarda dos dados (ANEXO A), com base na Lei nº 12.527, de 18 de novembro de 2011 (Lei de acesso à informação), que regula o acesso a informações em conformidade com os princípios básicos da administração pública da União, Estados, Distrito Federal e Municípios. Esta Lei considera, entre outras prerrogativas, informação: como dados, processados ou não, que podem ser utilizados para produção e transmissão de conhecimento, contidos em qualquer meio, suporte ou formato (BRASIL, 2011b). Foram extraídos dados secundários das teleconsultorias de Odontologia assíncronas, nos quais foram coletadas as seguintes variáveis: sexo e especialidade odontológica do solicitante da teleconsultoria (cirurgião-dentista da atenção primária do SUS); data e horário da pergunta (postagem) e resposta (para analisar se a devolutiva ao profissional foi realizada dentro do limite de tempo adequado e se a plataforma foi acessada dentro ou fora do horário de trabalho); área odontológica da dúvida da teleconsultoria (categorizada de acordo com códigos de CID-10 e CIAP 2 das perguntas); satisfação do profissional com a teleconsultoria (muito insatisfeito, insatisfeito, indiferente, satisfeito ou muito satisfeito) e se a teleconsultoria evitou o encaminhamento do paciente (sim, não). As macrorregiões do Brasil e municípios que solicitaram as teleconsultorias foram caracterizados socioeconomicamente por meio de: Índice de Desenvolvimento Humano Médio (IDHM) para as macrorregiões e Índice de Desenvolvimento Humano municipal para os municípios que solicitaram as teleconsultorias. O IDHM para as macrorregiões foi calculado pela soma do IDH de cada estado correspondente à macrorregião, dividido pelo número de estados da mesma. **Utilizou-se esta forma de cálculo, devido aos dados serem mais atuais em relação ao período de coleta, do que os referentes ao IDH das macrorregiões. (PNUD BRASIL, 2016a; PNUD BRASIL, 2020), estimativa populacional (BRASIL, 2019b), Índice de Gini (BRASIL, 2019c; BRASIL, 2022c), longevidade, taxa de**

analfabetismo e renda per capita (BRASIL, 2022c e de acordo com a cobertura dos Centros de Especialidades Odontológicas (CEO) (BRASIL, 2022d), Equipes de Saúde Bucal da Estratégia de Saúde da Família (ESB/ESF) e Equipes de Saúde Bucal da Atenção Primária à Saúde (ESB/APS) (BRASIL, 2020). O IDH é uma medida composta de indicadores de três dimensões do desenvolvimento humano: longevidade, educação e renda. O índice varia de zero a um. Quanto mais próximo de um, maior o desenvolvimento humano (PNUD BRASIL, 2016b). De acordo com o IBGE, o Brasil possui 5570 municípios organizados em 26 estados e o distrito federal, sendo dividido em cinco macrorregiões: Norte, Nordeste, Sudeste, Sul e Centro-Oeste (BRASIL, 2019c).

A descrição das variáveis utilizadas no estudo é apresentada na Tabela 2:

Tabela 2 – Descrição das variáveis utilizadas no estudo, Brasil, 2019-2020.

Variável	Classificação	Descrição
<i>Variáveis das teleconsultorias</i>		
Horário da pergunta	Categórica nominal	Dentro do horário de trabalho (08:00 às 18:00), fora do horário de trabalho (demais horários do dia)
Horário da resposta	Categórica nominal	Dentro do horário de trabalho (08:00 às 18:00), fora do horário de trabalho (demais horários do dia)
Tempo até a resposta	Categórica nominal	Dentro do limite de tempo (até 72 horas), Fora do limite de tempo (>72 horas).
Área da dúvida da teleconsultoria	Categórica nominal	Classificação de acordo com a área odontológica a partir dos códigos de CID-10 e CIAP: clínica odontológica, prevenção e promoção de saúde, farmacologia, semiologia, estomatologia e serviços*
Satisfação	Categórica ordinal	Muito insatisfeito, insatisfeito,

		indiferente, satisfeito, muito satisfeito ou não informado
Encaminhamento evitado	Categórica nominal	Sim ou não
<i>Variáveis dos profissionais que solicitaram a teleconsultoria</i>		
Sexo	Categórica nominal	Feminino ou Masculino
Especialidade Odontológica	Categórica nominal	Cirurgião-dentista da estratégia de Saúde da Família, Cirurgião-dentista generalista, Cirurgião-dentista especialista
<i>Variáveis das macrorregiões e municípios</i>		
Macrorregião do Brasil	Categórica nominal	Norte, Nordeste, Centro-Oeste, Sudeste e Sul
IDHM	Quantitativa contínua	Valor de 0 a 1 – Cálculo do IDH médio de cada macrorregião a partir do IDH de cada grupo de estados correspondentes para o ano de 2017
IDHm	Quantitativa contínua	Valor de 0 a 1 – Correspondente a cada município que solicitou teleconsultoria
Estimativa populacional	Quantitativa discreta	Número de habitantes de cada macrorregião
Índice de Gini	Quantitativa contínua	Valor de 0 a 1 - Cálculo do Índice de Gini médio de cada macrorregião a partir do Índice de Gini de cada grupo de estados correspondentes para o ano de 2019/ e valor de cada município que solicitou teleconsultoria
Taxa de analfabetismo	Quantitativa contínua	Taxa de analfabetismo de cada município que solicitou teleconsultoria
Renda per capita	Quantitativa contínua	Renda per capita de cada município

Longevidade	Quantitativa contínua	Expectativa de vida ao nascer de cada município que solicitou teleconsultoria
Cobertura dos CEO	Quantitativa contínua	Taxa de CEO/1.000.000 habitantes de cada macrorregião e município que solicitou a teleconsultoria
Cobertura ESB/ESF	Quantitativa contínua	Porcentagem anual média de cada macrorregião
Cobertura ESB/APS	Quantitativa contínua	Porcentagem anual média de cada macrorregião e município que solicitou a teleconsultoria

*Dúvidas relacionadas a questões de Odontologia que não puderam ser classificadas dentro das demais áreas, envolvendo o processo de trabalho, funcionamento do serviço e encaminhamentos de pacientes.

Fonte: Paixão *et al.* 2022.

3.3 Análise dos dados

Os dados categóricos foram analisados descritivamente por meio de frequência. Os dados correspondentes à caracterização das macrorregiões: IDHM e Índice de Gini foram calculados por meio de valores médios (soma dos valores dos estados e divisão pelo número de estados correspondentes à cada macrorregião); e os valores de taxa de cobertura dos CEO e cobertura de ESB/ESF e ESB/APS, foram identificados pelos valores médios anuais, considerando todos os meses do ano, para cada macrorregião e municípios.

Este estudo resultou em 3 artigos. O Artigo 1, um estudo transversal, descritivo e exploratório, avaliou os dados secundários das teleconsultorias odontológicas assíncronas do ano de 2019. Como critério de inclusão, apenas as teleconsultorias solicitadas por profissionais dentistas foram analisadas. Além disso, as teleconsultorias extraídas sem a informação sobre o estado de origem (n=19) e que se encontravam duplicadas (n=665) foram excluídas. O modelo teórico utilizado na confecção do artigo considerou que os fatores relacionados ao serviço, aos profissionais, à demanda por cuidado em saúde, e aos fatores socioeconômicos

podem interferir nos Programas de Telessaúde (Nepal *et al.*, 2014). Dessa forma, o artigo 1 analisou todas as variáveis individuais do presente estudo; sobre as Teleconsultorias odontológicas e as macrorregiões do país (Tabela 2), avaliou-se: o sexo e a especialidade do dentista que solicitou a teleconsultoria; a data e o horário do questionamento e a resposta enviada pelo teleconsultor, determinando se o questionamento foi apresentado no horário de trabalho (entre 08:00-18:00) ou não; o tempo transcorrido do questionamento até a resposta em horas; a satisfação dos profissionais de saúde da APS com as soluções obtidas na teleconsultorias; e se a teleconsultoria evitou o encaminhamento do paciente para outra unidade de atenção. As áreas odontológicas que suscitaram os questionamentos nas teleconsultorias foram categorizadas de acordo com os códigos de CID-10 e CIAP-2, informados no SMART: a) clínica odontológica (especialidades como: dentística, endodontia e periodontia); b) prevenção e promoção de saúde (procedimentos profiláticos e educação em saúde bucal); c) farmacologia (prescrição e efeitos adversos de medicamentos); d) semiologia (diagnósticos em geral e alterações sistêmicas, como, por exemplo, diabetes e hipertensão); e) estomatologia (lesões bucais); e, f) serviços (questionamentos que não se enquadravam nas categorias acima, relacionadas ao funcionamento do sistema de saúde, aos procedimentos administrativos e ao encaminhamento de pacientes). As cinco regiões do país: Norte, Nordeste, Centro-Oeste, Sudeste e Sul, foram caracterizadas socioeconomicamente de acordo com o IDHM, estimativa populacional, o Índice de Gini, as coberturas das ESB/APS e ESB/ESF e a taxa de cobertura dos CEOs. Foi realizada uma análise descritiva utilizando-se o programa *IBM Statistical Package for Social Sciences* (SPSS), versão 22.0. Devido ao seu viés descritivo e exploratório, o artigo 1 permitiu a formulação de novas hipóteses para estudo nos artigos 2 e 3 de forma analítica.

O Artigo 2, um estudo transversal analítico, avaliou os fatores associados à satisfação dos profissionais de saúde da APS com as soluções obtidas nas teleconsultorias no ano de 2020. Como critério de inclusão, apenas as teleconsultorias solicitadas por profissionais dentistas foram consideradas. A “satisfação profissional” com o resultado da teleconsultorias foi definida como a variável dependente (desfecho do estudo). A “satisfação” foi mensurada a partir do *feedback* dos profissionais da APS, inseridos na plataforma SMART, em resposta à pergunta “satisfação”: (muito satisfeito, satisfeito, indiferente, insatisfeito, muito

insatisfeito). Para se proceder à análise, o quesito “satisfação” foi dicotomizado em “muito satisfeito/satisfeito” e “indiferente/insatisfeito/muito insatisfeito”. As variáveis independentes incluíram fatores relacionados às teleconsultorias e aos profissionais solicitantes, tais como: o sexo e a especialidade odontológica do profissional solicitante; a área odontológica que suscitou o questionamento ao teleconsultor; o horário do questionamento e aquele da resposta recebida, para determinar se a solicitação ocorreu dentro do horário de trabalho (entre 08:00-18:00) ou não; e finalmente, se a teleconsultoria evitou o encaminhamento do paciente. As variáveis foram analisadas descritivamente por frequências absoluta e relativa. Modelos de regressão logística binária estimaram a odds ratio (OR), os intervalos de confiança (95%) e os valores de p para testar a associação entre o desfecho e as variáveis independentes. Todas as variáveis que apresentaram valor de $p < 0.25$ na análise bivariada foram incluídas no modelo de regressão logística múltipla. As variáveis com valor de $p < 0.05$ foram mantidas no modelo final. Testes de multicolinearidade foram realizados entre as variáveis independentes, avaliando-se o fator de inflação da variância (VIF). O teste de *Hosmer-Lemeshow* (HL) avaliou a qualidade de ajuste do modelo de regressão logístico. Toda a análise estatística foi realizada com o programa SPSS, versão 22.0.

O artigo 3, um estudo transversal analítico com dados do ano de 2020, utilizando-se de uma análise multinível, avaliou os fatores associados ao “encaminhado evitado” de pacientes para outros níveis de atenção após a realização das teleconsultorias odontológicas. Foram incluídas na análise somente as teleconsultorias enviadas por profissionais dentistas e que receberam o *feedback* destes profissionais sobre o encaminhamento ou não dos pacientes para outra unidade. O estudo teve como desfecho a análise do “encaminhamento evitado” pela teleconsultoria, tendo sido esta caracterizada como “sim” ou “não”. Como variáveis individuais (nível 1) foram avaliados: o sexo e a especialidade odontológica do solicitante da teleconsultoria e área odontológica na qual a dúvida foi suscitada; e, como variáveis contextuais, as características dos municípios onde situavam as unidades de APS que solicitaram as teleconsultorias (nível 2): o Índice de Desenvolvimento Humano municipal (IDHm), a cobertura das ESB da APS e a taxa de cobertura dos CEOs, a taxa de analfabetismo dos municípios, o Índice de Gini, a longevidade e a renda *per capita* municipal. Primeiramente, realizou-se uma análise descritiva utilizando-se o Programa SPSS, versão 22.0. O programa *Hierarchical*

Linear and Nonlinear Modeling Software foi utilizado na análise multinível e na associação entre as variáveis individuais e contextuais relativas ao desfecho: “encaminhamento evitado”. A análise incluiu 1.319 teleconsultorias (nível 1) de 279 municípios (nível 2). Os parâmetros foram estimados utilizando-se o método multivariado de máxima verossimilhança restrita e a estimação por quase-verossimilhança preditiva. O modelo de regressão logística multinível foi construído. Na primeira etapa, de sua construção foi estimada a partição básica da variabilidade dos dados entre dois níveis pelo modelo nulo e, depois considerou-se as variáveis individuais e contextuais. Para determinar se as diferenças entre os municípios foi responsável pela variabilidade do resultado, calculou-se o coeficiente de partição de variância (VPC). Para testar a associação entre o desfecho e as variáveis dos níveis 1 e 2, cada uma delas foi individualmente incorporada ao modelo, antes de serem testadas juntas, utilizando-se o *teste-t de student* ($p < 0.05$). O modelo multinível foi construído com as variáveis que atingiram um valor de $p < 0.25$. Em cada análise, os valores de p , OR e intervalos de confiança (95%) foram estimados. Para determinar a adequação do modelo multinível final, foi utilizada a estimativa de confiabilidade. Todas as variáveis teoricamente associadas ao desfecho foram mantidas no modelo final.

Durante a extração dos dados das variáveis do estudo, houve para algumas delas dados faltantes, que não foram preenchidos na Plataforma do SMART (dados perdidos). Para a análise estatística, foram considerados para cada variável todos os dados válidos e, aquelas com dados faltantes foram devidamente evidenciadas e suas perdas explicadas nas tabelas de cada artigo.

3.4 Considerações éticas

As pesquisas que envolvam seres humanos, direta ou indiretamente, incluindo manejo de informações ou de materiais, devem atender as exigências éticas e científicas fundamentais, de acordo com a Resolução 466/12 (BRASIL, 2012). Assentindo com esta resolução, esta pesquisa foi submetida e aprovada pelo Comitê de Ética em Pesquisa (COEP) em seres humanos da Universidade Federal de Minas Gerais (CAAE 17400319.9.0000.5149) (Anexo B).

Para o presente estudo, não foram necessárias a anuência dos participantes por meio de um Termo de Consentimento Livre e Esclarecido (TCLE), uma vez que

os dados secundários coletados foram obtidos através do banco de teleconsultorias assíncronas do Telessaúde Brasil Redes. Como não se trata de um banco público, o Termo de Anuência foi enviado para o responsável pela guarda desses dados, solicitando autorização para realização da coleta no período correspondente aos anos 2019 e 2020. Os pacientes, profissionais solicitantes da teleconsultoria e teleconsultores tiveram suas identidades preservadas.

4 ARTIGOS CIENTÍFICOS

Três artigos científicos gerados a partir dos dados obtidos no presente estudo compõe este Capítulo.

4.1 Artigo 1

Este artigo foi aceito para publicação no periódico *Brazilian Oral Research – BOR* (Qualis A2/ IF: 2.674). (Anexo C). A versão que se encontra neste documento apresenta modificações sugeridas pela banca examinadora no momento da defesa para proporcionar maior clareza ao leitor do texto.

Thematic Areas: Community Dental Health; Social/Community Dentistry;

National analysis of dental teleconsulting of the Brazilian Telehealth Program

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ABSTRACT

This cross-sectional study nationally evaluated asynchronous dental teleconsulting services offered by the Telehealth Brazil Networks Program, using the 2019 Telehealth Results Monitoring and Evaluation System database and considering Brazilian regional differences. The following teleconsulting variables were collected: dentist's sex and specialty, date/time of question and answer, response time; dental specialty of doubt, professional satisfaction, and patient referral. Five Brazilian regions were socioeconomically characterized according to the Human Development Index, estimated population, Gini coefficient, coverage of dental specialty centers, oral health teams in Family Health Strategy, and oral health teams in primary health care (PHC). In total, 2,703 teleconsulting sessions occurred in Brazil in the analyzed period. The Southeast exhibited the highest demand (49.1%). Most dentists were female (60.6%) and were dental surgeons from the Family Health Strategy (61.3%). Most teleconsulting sessions occurred during working hours (85.5%) and questions were answered within 72 hours (66.7%). Level of satisfaction and avoidance of referral yielded rates of 90.9% and 66.8%, respectively, among dentists who answered about these topics. Semiology was the most frequently demanded area in teleconsulting (33.9%). The different demands from the regions reflected regional

differences. The most frequently demanded specialties represent the Brazilian PHC scenario. Professionals incorporated teleconsulting into their work routine and most teleconsultants responded within the stipulated timeframe. Professional feedback should be encouraged.

Keywords: Telemedicine. Telehealth. Primary Health Care. Dentistry.

INTRODUCTION

Telehealth provides services and shares information on healthcare.¹ It has fosters the continuing education of health professionals and supports multidisciplinary care, especially in underserved areas.² Also, it has considerably improved quality, efficiency, and costs, expanding point-of-care options and diagnosis and decreasing inequalities in the provision of oral health services.³

Likewise, teledentistry facilitates remote dental care, via information technologies,⁴ and has allowed earlier diagnosis than regular tests.⁵ Teledentistry presents a wide range of applications, such as teleconsultations (remote communication between dental professionals and patients), telediagnosis, teletriage, and telemonitoring, in which the progress of treatment outcomes and disease progression are monitored remotely.⁶ Therefore, teledentistry has been used to improve people's access to specialized oral healthcare^{5,7} and has been efficiently applied in teleassistance and tele-education in dental public health services.⁷ In the current scenario of the COVID-19 pandemic, the importance of teledentistry has become even more noticeable, because it may reinforce social distancing, offering remote triage of patients for dental treatment, avoiding their unnecessary exposure.⁸

In Brazil, a developing country with continental dimensions, there is heterogeneous distribution of healthcare infrastructure, varying professional training

levels, and socioeconomic and cultural contrasts, leading to unequal access to healthcare across its five regions.^{9,10} Public dental care services are also included in this scenario, with differences in its geographical distribution and in the availability of dental supplies and equipment,¹¹ and the epidemiological aspects of the Brazilian population reflect the country's contrasts.¹²

The telehealth project was implemented in Brazil in 2006³ by the Ministry of Health.¹³ The program, currently known as the Telehealth Brazil Networks Program,³ was expanded to include the entire country and was redefined to strengthen and increase the resolution ability of primary health care (PHC) services and improve access to specialized healthcare.^{3,9}

One of the Program's strategies is teleconsulting, which consists of bidirectional communication between PHC professionals and teleconsultants (experts in a specific area) for assistance or advanced information on clinical care, health promotion actions, or work process. Teleconsulting is offered by telehealth centers and take place via synchronous messaging, videoconferences, or asynchronous messages that must be answered within 72 h.^{3,7} Brazilian regulations state that teleconsulting must only occur between professionals rather than directly between patients and health professionals.² However, Resolution no. 226/2020 published in 2020, by the Brazilian Federal Council of Dentistry, allows telemonitoring (remote monitoring of patients undergoing treatment by dentists), and teleadvice with the application of a preclinical questionnaire to decide on the best time to attend to them, considering COVID-19 pandemic restrictions.¹⁴

The Program has been evaluated by some studies,¹⁵⁻¹⁷ but none has nationally explored dental teleconsulting. Thus, the present study aimed to nationally

describe regional differences in dental teleconsulting provided by the Telehealth Brazil Networks Program.

The null hypothesis was that Brazilian regions have a similar demand for teleconsulting.

METHODS

This cross-sectional and exploratory study evaluated a secondary database of asynchronous dental teleconsulting of the Telehealth Brazil Networks Program during 2019. Telehealth centers are deployed in almost every state of the country¹⁸ but not all of them actively use telehealth services. The services provided by each center vary in terms of structure and capacity, and some centers book teleconsulting sessions with other telehealth centers. For example, the telehealth center platforms of the states of Rio Grande do Sul and Minas Gerais are also used for requests from other telehealth centers, thus helping meet the heavy demand.¹⁹ The distribution of teleconsulting is shown in Figure 1.

Data were collected from the Monitoring and Evaluation System of the Telehealth Results (in Portuguese, Sistema de Monitoramento dos Resultados do Telessaúde — SMART) database, which integrates information on telehealth centers into the Program.²⁰

In the SMART database, International Classification of Diseases (ICD-10) and the International Classification of Primary Care 2 (ICPC-2) codes applied to dentistry were used to filter asynchronous teleconsulting data.²¹ As inclusion criteria, only teleconsulting requested by dentists was analyzed. Teleconsulting services extracted without any information about the state of origin (n=19) and duplicates were excluded (n=665). The theoretical model used considered that factors related to service,

professionals, demand for healthcare, and socioeconomic issues may interfere in telehealth programs.²² The following teleconsulting variables were used: dentist's sex and specialty and date/time of question and answer, to determine whether teleconsulting was requested between 8 a.m. and 6 p.m. or outside working hours; response time in hours; professional satisfaction (satisfied, neither satisfied nor dissatisfied, dissatisfied, or not informed); and whether teleconsulting avoided patient referral (yes, no, or not informed). The fields of teleconsulting questions were categorized as per ICD-10 or ICPC-2 into clinical dentistry, which encompasses some dental specialties, such as dentistry, endodontics, and periodontics; health promotion and prevention (prophylactic measures and oral health education); pharmacology (prescription of medications and adverse effects); semiology (diagnosis in general and systemic disorders such as diabetes and hypertension); stomatology (oral lesions); and service (dental issues that do not fit into dental specialties, related to the health system, health service operation, administrative process, and patient referral). Five Brazilian regions were socioeconomically characterized according to the Human Development Index (HDI),²³ estimated population,²⁴ Gini coefficient,²⁵ and coverage of the dental specialty centers (DSCs),²⁶ oral health teams in Family Health Strategy (OHT/FHS), and OHT in PHC (OHT/PHC).²⁷

The results were descriptively analyzed by frequency and stratified by Brazilian regions using the IBM Statistical Package for Social Sciences, v 22.0 (IBM SPSS Statistics for Windows, Armonk, NY, USA). For variables with missing data, the statistical analysis considered all valid information, and losses are explained in the tables.

The study was approved by the Research Ethics Committee of Universidade Federal de Minas Gerais (UFMG) under protocol N° 3.662.611 (CAAE 17400319.9.0000.5149).

RESULTS

A total of 2,703 teleconsulting sessions were conducted in Brazil in 2019, with the highest demand from the Southeast (49.1%), followed by the Midwest (23.5%). The South had the highest HDI and lowest Gini coefficient. The Southeast was the most populated region. DSC, OHT/FHS, and OHT/PHC coverages were better for the Northeast (Table 1).

Most dentists requesting teleconsulting were female (60.6%) and the most significant demand was for dental surgeons from the FHS (61.3%) and generalists (31.3%). Most teleconsulting sessions occurred during working hours (85.5%) and were answered within 72 hours (66.7%). Regarding professional satisfaction, 90.9% were satisfied (question answered by 53.3% of professionals). Concerning patient referral, 66.8% said teleconsulting avoided it (67.1% of professionals answered this question) (Table 2).

Regarding dental specialties, a large number of questions were related to semiology (33.9%), followed by clinical dentistry (31.6%) (Table 3).

DISCUSSION

Different demands were addressed in teleconsulting across the five Brazilian regions, in line with their socioeconomic and cultural contrasts, invalidating the null hypothesis.

The highest demand for teleconsulting from the Southeast was due to its larger population,²⁴ when compared to other regions, and to its higher percentage of telehealth centers, when compared to those in other states.¹⁸ In addition, the Southeast has the second highest HDI of Brazil,²³ suggesting a better infrastructure of healthcare services, facilitating the communication between PHC professionals and teleconsultants.

The Midwest, with the third highest HDI,²³ the second lowest Gini coefficient,²⁵ and the second highest coverage of DSC,²⁶ OHT/FHS, and OHT/PHC²⁷ exhibited the second highest demand for teleconsulting.²⁷ Another possibility is that professionals from the Midwest are more aware of the use of the Program. Teleconsulting is a crucial tool for this region, not only for filtering secondary healthcare demand,²⁸ but especially for supporting PHC, given that the Midwest has one of the worst oral health indices.¹²

The Northeast had the third highest demand for teleconsulting. This ranking position might have resulted from its better PHC coverage²⁷, providing the population with better support. However, this region has the second most significant population, with the lowest socioeconomic status²³ and the highest amount of social inequalities.²⁵ Moreover, despite the better DSC coverage²⁶, Northeasterners have limited access of OHTs to DSC²⁸ and one of the greatest needs for restorations, endodontic treatments, and tooth extractions.¹² Accordingly, teleconsulting could help solve PHC problems, as patients at health units where the referral of more complex cases is difficult have to be assisted in the PHC setting.

The South had the best socioeconomic indices and the second lowest demand for teleconsulting. This might be due to the better oral health epidemiological characteristics of its population and the greater demand by teenagers, adults, and

seniors for preventive oral health consultations.¹² This could result in fewer complex treatments (e.g., restorations, endodontic treatments, and surgeries).¹² Thus, if the population requires less complex procedures and diagnosis, PHC dentists will probably have fewer concerns.

The North had the lowest demand for teleconsulting, with huge socioeconomic challenges just as the Northeast.²⁸ The population from the northern states, just as that of the Northeast and Midwest, have worse oral health status and require more complex treatments.¹² Also, the North has the lowest DSC coverage,²⁶ suggesting a lack of support for secondary healthcare. Teleconsulting could provide this support by assisting in the decision to treat patients in the PHC setting or refer them to other services.^{14,20} Telehealth is likely to be underused in this region and should be stimulated to improve the healthcare of the population.

Eliminating regional differences in access to dental care is a daunting challenge. Integrated care is considered to provide higher-quality and more cost-effective care^{28,29} and is often related to characteristics embraced by telehealth such as integrated ICTs, population-focused care, professional development, and innovation.²⁸ The importance of telehealth has also been reported for rural America, where increased provision of high-quality telehealth services may minimize disparities and enhance the connection between clinicians.³⁰

The primary demand for teleconsulting in all Brazilian regions was from female dentists, as observed elsewhere,^{15,16,31} and that may reflect the higher prevalence of females in healthcare services,^{15,17} their greater adherence to the Program, or a more significant concern with women's professional conduct.¹⁶ The primary demand from FHS dental surgeons and general dental practitioners was expected thanks to the Brazilian PHC profile.

According to the SMART, teleconsulting is the second most offered service by telehealth centers, and asynchronous activities are used mainly by PHC professionals,¹⁹ probably because of the convenient time schedule.¹⁵ While most teleconsulting sessions took place during working hours (South: 92.3%, Northeast: 88.0%, Southeast: 84.5%, Midwest: 83.4%, and North: 72.7%), 14.5% were requested after hours. As observed earlier,^{16,32} some questions were submitted at night, suggesting professionals incorporated asynchronous teleconsulting into their routines.³² However, this raises some concern because, outside working hours, professionals have other obligations to attend to and may forget or not have enough time for teleconsulting, and, therefore, their needs are eventually underreported. Evening requests may have occurred due to connectivity failures or difficulty accessing the platform during working hours because of work overload.¹⁵

Another possible reason may be that some managers do not allow access to the platform during working hours for streamlining professional production. Services should facilitate health professionals' access to the telehealth platform as a work routine,¹⁵ and the government should improve the training of telehealth professionals to achieve more efficient PHC.

Most teleconsulting questions were answered within 72 h, showing telehealth centers reply within the stipulated time.³ However, 33.3% of the requests were answered after 72 h, raising a concern, since it may compromise patient's assistance. In the Northeast and North, telehealth centers answered the questions within the stipulated time (86.8% and 81.8%, respectively), while in the Midwest, this rate was lower (53.1%). It is important to enhance the commitment of teleconsultants on providing PHC professionals with feedback.

Although most professionals answered the question about their satisfaction with the service, 46.7% did not, which limited the study and hindered the evaluation process.¹⁷ This low response rate occurred in the Southeast, South, and Northeast regions (36.9%, 42.5% and 47.8%, respectively). The Midwest and North presented higher response rates (95.0% and 81.8%, respectively). Among the professionals who answered that question, almost all reported being very satisfied or satisfied. Satisfaction with the teleconsulting service has also been reported in previous studies^{16,17,31} and points to the importance of telehealth in assisting PHC professionals. The ability of teleconsulting to help solve daily problems is related to greater utilization of the system³¹, thus underscoring the importance of feedback from professionals^{16,17} to render the program more effective.³³

Regarding patient referral to other care levels, the response rate was a little higher, and 66.8% of the professionals who answered that question said teleconsulting avoided patient referral. The South and Southeast exhibited, once again, the lowest response rates (66.7% and 49.1%, respectively). The highest rates for avoided patient referral were obtained from the Midwest and South (98.3% and 84.8%, respectively), whereas the Southeast had the lowest rate (57.6% did not avoid patient referral). Various studies have suggested the efficacy of telehealth in avoiding unnecessary patient referral to secondary and tertiary care^{15-17,31,32} and in increasing PHC effectiveness.¹⁷ Telehealth can be used as a supporting tool for the referral and counterreferral systems, integrating them. Again, feedback from professionals is fundamental for the evaluation of the Program in the PHC setting.¹⁶ The perception of the usefulness of telehealth is related to the fulfillment of users' needs, being extremely important for program planning and for incorporation of teleconsulting into daily practice.³¹

The higher demand for semiology (Southeast: 55.4%) and clinical dentistry (Midwest: 55.8%, South: 44.9%, and Northeast: 27.9%) issues was expected since they are constantly present in PHC. The highest demand for issues related to semiology indicated some difficulty of professionals in diagnosing and managing patients with systemic disorders. Endodontics, minor oral surgery, and periodontics are constantly present in the daily practice of Brazilian PHC and are an integral part of clinical dentistry. They are the most common specialties that require referral to DSCs.²⁸ In this context, the support provided by teleconsulting may reduce unnecessary referrals and shorten the waiting time for secondary care.²⁸ Also, teledentistry could improve dental care through diagnostic collaboration between dental professionals.⁵ In the northern region, stomatology issues accounted for the highest demand (55.0%). This higher demand for stomatology issues has also been observed in other studies¹⁶⁻¹⁷ and may reveal the difficulty of PHC professionals in identifying and diagnosing oral lesions.

Accessing telehealth services is associated with better-quality health care³⁴ and could increase the problem-solving capacity of the OHT.²⁹ Nevertheless, a low rate of utilization of teledentistry services has been observed.¹⁷ Factors such as service infrastructure, difficult access to computers, and internet speed and connection,^{19,35,36} experience in the use of technology,³⁵ and high turnover of PHC professionals²⁰ can influence the adherence to the Program.

Data from the SMART secondary databases were a limitation of this study, as the information depends on the PHC professionals and telehealth centers. SMART is still underused by many telehealth centers, hindering the evaluation of the Program's impact in Brazil.¹⁹ Integrating information systems¹⁹ and encouraging professionals are challenges to be overcome.

CONCLUSIONS

Regions had different demands because of regional differences. The specialties that most demanded teleconsulting reflect the Brazilian PHC profile. Professionals incorporated teleconsulting into their work routine and most teleconsultants responded within the stipulated time. Feedback from professionals should be encouraged. The professionals' input and SMART use could help understand the impact of teleconsulting on the PHC support system.

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LEGENDS OF FIGURES

Figure 1 – Flowchart of the order of teleconsulting distribution process.

Table 1. Socioeconomic analysis of the Brazilian regions concerning the demand for teleconsulting. Brazil, 2019.

Macro-region	North	Northeast	Midwest	Southeast	South
n (%)	11 (0.4) [*]	523 (19.3) [*]	636 (23.5) [*]	1,326 (49.1) [*]	207 (7.7) [*]
Total 2,703 (100.0%)					
HDI [*]	0.730	0.711	0.789	0.795	0.796
Gini coefficient [*]	0.542	0.543	0.499	0.521	0.465
Estimated Population	18,430,980	57,071,654	16,297,074	88,371,433	29,975,984
DSC/1,000,000 inhabitants (rate)	3.91	7.99	5.03	4.57	4.70
OHT/FHS ^{**}	41.19%	66.82%	47.83%	27.45%	36.50%
OHT/PHC ^{**}	49.51%	71.64%	56.19%	41.55%	50.42%

^{*} Mean values considering the states of each macro-region

^{**} Annual mean values.

HDI – Human Development Index; DSC – Dental Specialty Center; OHT – Oral Health Team; FHS – Family

Health Strategy; PHC – Primary Healthcare

Table 2. Descriptive analyses of the profile of dental teleconsulting by region. Brazil, 2019.

Region	North	Northeast	Midwest	Southeast	South	Total	Missing values
n (%)	11 (0.4%)*	523 (19.3%)*	636 (23.5%)*	1,326 (49.1%)*	207 (7.7%)*		
Teleconsulting variables*							
Sex****							43 (1.6)
Female	6 (0.2)	276 (10.4)	432 (16.2)	761 (28.6)	137 (5.2)	1,612 (60.6)	
Dentist's specialty**							
Family Health Strategy	2 (0.1)	390 (14.4)	208 (7.7)	995 (36.8)	62 (2.3)	1,657 (61.3)	
General dental practitioner	6 (0.2)	116 (4.3)	370 (13.7)	270 (10.0)	84 (3.1)	846 (31.3)	
Specialist	3 (0.1)	17 (0.6)	58 (2.2)	61 (2.3)	30 (1.1)	169 (6.3)	
Time of question***							
Within working hours	8 (0.3)	460 (17.0)	531 (19.7)	1,120 (41.4)	191 (7.1)	2,310 (85.5)	
Response time							
Up to 72 hours	9 (0.3)	454 (16.9)	338 (12.5)	881 (32.6)	120 (4.4)	1,802 (66.7)	
Satisfaction****							
Satisfied	8 (0.6)	299 (15.9)	579 (40.2)	416 (28.9)	78 (5.4)	1,310 (90.9)	1,262 (46.7)
Neither satisfied nor dissatisfied	0 (0.0)	13 (0.9)	11 (0.8)	13 (0.9)	2 (0.1)	39 (2.7)	
Dissatisfied	1 (0.1)	8 (0.6)	14 (1.0)	61 (4.2)	8 (0.6)	92 (6.4)	
Avoided referral****							
Yes	6 (0.3)	242 (13.3)	572 (31.5)	276 (15.2)	117 (6.5)	1,213 (66.8)	888 (32.9)

*Community Health (1.8), Periodontist (1.7%), Dentistry (1.3%), Endodontist (0.6%), Dentistry for Patients with Special Needs (0.3%); Implantodontist, Oral and Maxillofacial Traumatologist, Legal Dentist and Prosthodontist (0.1%); Orthopedist and Orthodontist, Pediatric Dentist, Stomatologist, Occupational Dentistry (0.0%).

**Other: Auditor (1.1%).

***Between 8 am and 6 pm.

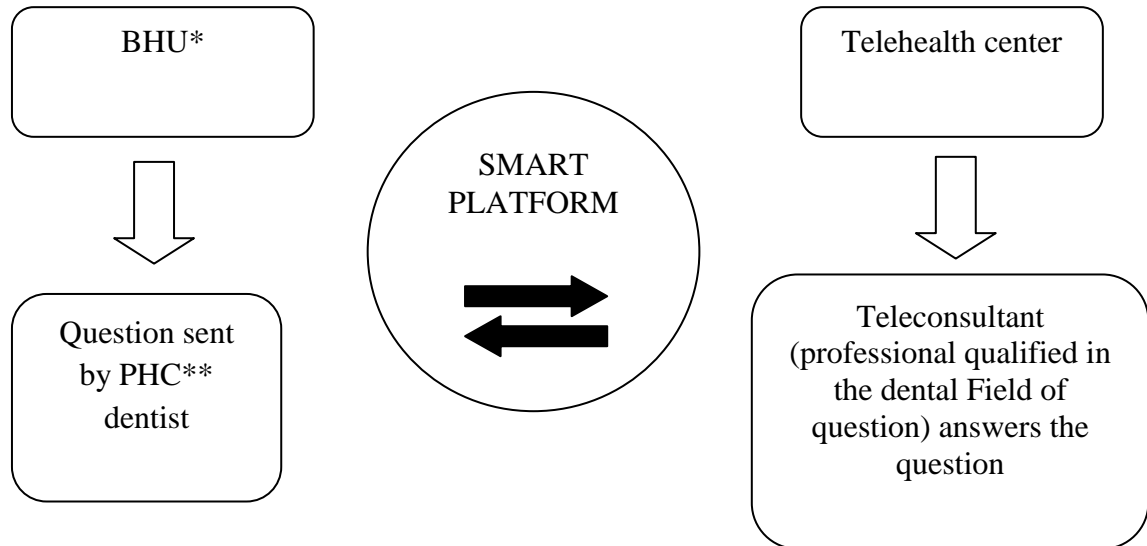
****Values corresponding to the total number of respondents.

Table 3. Descriptive analysis of dental teleconsulting by field of issue per region. Brazil, 2019.

Dental field n (%)	Region n (%)					
	North	Northeast	Midwest	Southeast	South	Total
	11 (0.4)*	523 (19.3)*	636 (23.5)*	1,326 (49.1)*	207 (7.7)*	
Semiology	2 (0.1)	55 (2.0)	104 (3.9)	735 (27.2)	19 (0.7)	915 (33.9)
Clinical dentistry	1 (0.0)	146 (5.4)	355 (13.1)	261 (9.7)	93 (3.4)	856 (31.6)
Stomatology	6 (0.2)	98 (3.6)	139 (5.1)	156 (5.8)	37 (1.4)	436 (16.1)
Health Promotion and Prevention Services	1 (0.0)	110 (4.1)	5 (0.2)	105 (3.9)	24 (0.9)	245 (9.1)
Pharmacology	1 (0.0)	56 (2.1)	32 (1.2)	57 (2.1)	30 (1.1)	176 (6.5)
	0 (0.0)	58 (2.1)	1 (0.0)	12 (0.5)	4 (0.1)	75 (2.8)

* Dental issues that did not fit into specialties, related to the health system, health service operation, administrative processes, and patient referral

Figure 1 – Flowchart of the order of teleconsulting distribution process.



*BHU: Basic Health Unit

**PHC: Primary Health Care

4.2 Artigo 2

Este artigo foi submetido ao periódico *Journal of Telemedicine and Telecare* (IF: 6.344). (Anexos D e E).

TITLE: Brazilian dental teleconsulting: satisfaction and associated factors

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ABSTRACT

Introduction: This study aimed at evaluating professional satisfaction with asynchronous dental teleconsulting and associated factors in Brazil.

Methods: It was a cross-sectional analytical study to assess asynchronous dental teleconsulting services offered by the Telehealth Brazil Networks Program during 2020. It used a secondary database, namely the Monitoring and Evaluation System of Telehealth Results. The variables collected were professional satisfaction; dentist's sex and specialty; time (hour) when the question and answer were submitted, patient referral, and the dental specialty addressed in the teleconsulting session. The variables were analyzed descriptively by frequency and binary logistic regression models tested the association between satisfaction and factors related to the dentist and the teleconsulting service. **Results:** A total of 1,719 dental teleconsulting sessions were conducted in Brazil in 2020. A 26.7% satisfaction level was achieved. The PHC professional's satisfaction with teleconsulting was indicated by the association between the professionals who declared that dental teleconsulting "avoided referrals" (OR 1.55, 95%CI 1.17-2.04, $p=0.002$) and the teleconsulting sessions in the field of oral medicine (OR 0.61, 95%CI 0.43-0.87, $p=0.006$). **Discussion:** Dentists showed low rates of satisfaction with asynchronous dental teleconsulting. Professionals reporting that teleconsulting avoided patient referrals to other care levels were more likely to be satisfied with the answer received from the teleconsultant. Moreover, dentists submitting oral medicine-related questions were significantly less satisfied with the teleconsulting feedback than those posing questions regarding other fields. Other factors should be included when evaluating professional satisfaction toward teleconsulting, such as the work process.

Keywords: Telemedicine. Telehealth. Primary Health Care. Dentistry. COVID-19.

INTRODUCTION

More common and ongoing use of Information and Communication Technologies (ICTs) have been recreating healthcare to put telehealth, especially teledentistry practices, in greater evidence¹⁻³. Concerning dentistry, ICTs provide remote and interactive access to expert opinion, to render advice to and treat patients^{2,3}. ICTs have provided early diagnosis⁴, helped address the disparate distribution of specialist healthcare services² by supporting remote multidisciplinary care^{1,3,4}, and promoted continuing education for health professionals^{3,5}. They have ensured excellent dental health service outcomes⁴, and have broad application, including teleconsultations, web conferences, tele-education, telediagnosis, telerriage and telemonitoring²⁻⁴. Since 2020, the COVID-19 pandemic has highlighted certain attributes of teledentistry, especially its concern to promote social distancing⁶. Teledentistry also avoids needless displacements, and helps reduce referral waiting time, hence economizing financial funds³.

Brazil is characterized by socioeconomic contrasts, dissimilar professional preparation levels, and unequal access to healthcare⁷, including dental care services⁸. The Health Ministry implemented the Telehealth Brazil Networks Program to strengthen, address, and resolve both Primary Health Care (PHC) issues and access to specialized health in Brazil^{5,7}. As of 2006, the program was expanded and redefined to include the entire country^{5,7}.

Teleconsulting is one of the program's strategies, and consists of exchanging communications between the PHC professional and a teleconsultant (expert in a specific field). These messages address different issues, including clinical matters,

health promotion actions, and dental practice (work processes). Telehealth centers are responsible for offering teleconsulting services communicated synchronously by messaging and videoconferences, or asynchronously by dialogues that must be answered within 72 hours^{3,5}. Brazilian regulations state that teleconsulting can occur only among health professionals.¹ Nevertheless, the COVID-19 pandemic called for adopting Resolution #226/2020 by the Federal Dentistry Council, which allowed telemonitoring (remote monitoring of patients undergoing treatment by dentists), and teletriage (applying a pre-clinical questionnaire to define the best time to tend to these patients)⁹.

Satisfaction is an important outcome used to evaluate telehealth programs, and is indicative of the effectiveness of services offered¹⁰. Professional satisfaction is a good predictor of use of technology, adherence to treatment, and correct use of healthcare services by patients¹¹, and is as important as patient satisfaction¹².

Despite the limitations of using outcomes or results as criteria for evaluating medical care, these factors are the ultimate validators of its effectiveness. When evaluating healthcare services, and the care process itself, local conditions must be studied, including service infrastructure and processes supporting and guiding the care being offered¹³. The Telehealth Brazil Networks Program is a national government initiative⁵. Considering the risks and barriers to achieving optimal health outcomes in the country^{7,8}, an ongoing evaluation of the program is required to monitor the quality of care being offered, to locate gaps and improve its effectiveness¹³. Hence, this study aimed to evaluate professional satisfaction and associated factors in the asynchronous dental teleconsulting of the program in 2020. The null hypothesis was no association between professional satisfaction and factors related to dentists and dental teleconsulting.

MATERIALS AND METHODS

The Research Ethics Committee of the Universidade Federal de Minas Gerais approved the study under CAAE 17400319.9.0000.5149. This cross-sectional analytical study assessed a secondary database of asynchronous dental teleconsulting of the Telehealth Brazil Networks Program during 2020. Data were collected using the database of the Monitoring and Evaluation System of Telehealth Results (SMART-Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde, in Portuguese), which integrates information on telehealth centers into the program¹⁴. Teleconsulting data were filtered according to codes from the International Classification of Diseases (ICD-10) and the International Classification of Primary Care 2 (ICPC-2) applied to dentistry¹⁵. Only teleconsulting sessions requested by dentists were analyzed.

The study outcome was the satisfaction of the PHC professional asking the teleconsulting-related question toward the teleconsultant's answer. This variable had five categories based on the professional's feedback given at the end of the session: very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied and very dissatisfied, later dichotomized into: very satisfied/satisfied, or dissatisfied/neither satisfied nor dissatisfied/very dissatisfied.

Covariables included both dentist-related factors of the teleconsulting question asker categorized as: sex (female/male) and specialty (Family Health Strategy (FHS)/general dental practitioner/specialist); and teleconsulting-related factors (time of question and answer), to determine whether the teleconsulting service was requested within (8am-6pm) or outside working hours, and whether teleconsulting avoided patient referrals (yes/no).

Teleconsulting session dental fields were classified according to ICD-10 or ICPC-2: clinical dentistry (dentistry, endodontics and periodontics); health promotion and prevention (oral health education and prophylactic measures); pharmacology (prescription and adverse effects of medications); semiology (diagnosis and systemic disorders); oral medicine (oral lesions); and services (patient referral, the health system and service operation, and administrative processes).

The variables were analyzed descriptively by frequency. Binary logistic regression models estimated odds ratios (OR), 95% confidence intervals (95%CI), and p-values to test the association between satisfaction and factors related to the dentists and teleconsulting sessions. All p-value <0.25 variables in the bivariate analysis were included in the multiple logistic regression model. Variables with p-value <0.05 were retained in the final model. Multicollinearity tests were performed among the independent variables by evaluating variance inflation factors (VIF). The Hosmer-Lemeshow (HL) test was used to evaluate the logistic regression model adjustment quality. A residual analysis was performed using Cook's distance to evaluate suitability of the binary logistic regression model adjusted to the data. Regarding missing data variables, the statistical analysis considered all the valid information, and indicated loss of any information in the tables. All statistical analyses were performed using the Statistical Package for Social Sciences, v 22.0 (IBM SPSS Statistics for Windows, Armonk, NY, USA).

RESULTS

In 2020, 1,719 asynchronous dental teleconsulting sessions were conducted in Brazil. Regarding dentist satisfaction with the answer received, 73.3% were dissatisfied/neither satisfied nor satisfied. Concerning patient referral to other care levels, 65.0% of the professionals answering this question (77.1%) said teleconsulting avoided it. The most significant number of questions submitted was from female dentists (59.7%), specialty professionals from the FHS (55.3%), and general dental practitioners (37.6%). Most teleconsulting questions and answers were made during working hours (81.6% and 68.1%, respectively), and were related to semiology (33.2%), followed by clinical dentistry (32.8%) (Table 1).

Only “avoided referral” and “dental field” covariables were statistically associated with the PHC professional’s satisfaction with teleconsulting in the unadjusted OR analysis. In the adjusted binary logistic regression analysis, the professionals reporting that teleconsulting avoided patient referral to other care levels were more likely to be satisfied with the teleconsultant’s answer (OR 1.55, 95%CI 1.17-2.04, $p=0.002$). Dentists submitting oral medicine questions were significantly less satisfied with the teleconsulting feedback (OR 0.61, 95%CI 0.43-0.87, $p=0.006$), compared with clinical dentistry.

The statistical model had a good fit, according to the following tests: HL p -value=0.953, VIF values close to 1.0, suggesting absence of collinearity problems, and Cook’s distance values lower than 1.0.

DISCUSSION

This was the first investigation of factors associated with the PHC professional’s satisfaction with the asynchronous dental teleconsulting of the

Telehealth Brazil Networks Program, and involved an important point in time (COVID-19) for evaluating remote healthcare support^{3,6,16}.

The first finding of this study raises a concern, since only a minor part of the dentists (26.7%) reported being satisfied with the service, in contrast to the results found in previous studies^{17,18}. PHC professionals answered the closed questions on the SMART platform according to their level of satisfaction with teleconsulting, but did not specify their criteria. Professional satisfaction with telehealth services^{10,11,12} should be addressed from several perspectives¹⁹, such as the professional's profile and demographics (sex and specialty)^{10,12}, care-related contexts and experiences (type of practice and system, workflow, and amount of technical support available)^{10,12}, and environmental and regional considerations¹⁰. Deficient quality of service equipment and of information received^{11,12} affects the use of the telehealth systems, influences satisfaction negatively, and prevents the professionals from using the system¹¹. Conversely, the motivation¹² leading professionals to use technology-related systems can benefit both patients and professionals, by promoting prompt diagnosis and treatments^{11,12}.

Female dentists were responsible for the highest number of teleconsulting questions, as observed previously^{18,20}. This may reflect the great adherence of women to the program¹⁸, or their prevalence in offering the service^{17,18}. However, the PHC professional's sex was not statistically related to satisfaction with the teleconsulting sessions.

The major demand for teleconsulting by FHS dental surgeons and generalists, and the lack of their statistical association with satisfaction was expected based on the Brazilian PHC profile. In Brazil, PHC organizes and

guides oral health demands²¹, and is the entry point for initial care; moreover, it is responsible for solving most of the population's problems^{21,22}. Teledentistry is important because it resolves questions posed by PHC professionals¹⁻⁵, confirms patient diagnosis, and qualifies the patient referral process³, thereby improving doubt resolving, and the health service cost/benefit ratio³.

Asynchronous teleconsulting can be scheduled at the professional's convenience; however, the teleconsulting services must favor and encourage access to the platform as part of the work routine²⁰. Although most teleconsulting questions were submitted and answered during working hours, some were submitted at night, as observed elsewhere¹⁸. Evening requests commonly result from work overload¹², connectivity failures²⁰, or even infrastructure limitations²³, factors that could influence the professionals' satisfaction¹². Nevertheless, the time of teleconsulting questions and answers was not statistically associated with the PHC professionals' satisfaction.

Effectiveness^{3,10} influences satisfaction, and accompanies the concept of resolvability, regarding how well a health service can solve a problem based on its level of competence, especially in regard to avoiding unnecessary patient referrals¹⁹. There were some missing data for "patient referrals"; nevertheless, 65.0% of the professionals answering the question said that teleconsulting avoided these referrals, and were more likely to be satisfied with the teleconsultant's answer. Feedback from professionals must be encouraged to ensure adequate evaluation of the program^{18,19}. Telehealth has been reported as effective in avoiding unnecessary referral of patients to other care levels¹⁷. The perception concerning its usefulness is related to how well it can fulfill the professional's needs. Its awareness stresses the importance of

program planning and incorporation of teleconsulting into the professional's practice²³. Nevertheless, patient referral to another level of care does not necessarily mean that the teleconsulting did not solve the issue¹⁹, considering that the data collected from the platform does not convey the information of whether or not the referral was necessary.

The type of care offered influences the process of evaluating one's satisfaction, including "categories of care" packaged into the specialty fields¹⁰. Most of the questions related to semiology and clinical dentistry were expected, since they are constant issues associated with PHC – responsible for offering comprehensive care, including health promotion, diagnoses, treatments and rehabilitation²². In addition to these issues, questions related to health promotion and prevention, pharmacology, and services were not statistically associated with the PHC professional's satisfaction. However, dentists submitting oral medicine questions were significantly less satisfied with the teleconsulting feedback, an attitude raising concern. The high number of oral medicine questions regarding telehealth programs^{17,18,24}, and the difficulty encountered in diagnosing PHC-related oral diseases^{3,17,18,20} have also aroused attention. Oral health teams in Brazil have performed poorly in the early detection of oral cancer; moreover, many cities do not have reference services for these cases²⁵. In addition, aspects related to the service's infrastructure and organization^{12,23} may influence the feasibility of the professionals to follow the guidance received in the teleconsulting, thus interfering in their satisfaction.

During the COVID-19 pandemic, physical contact reduction to prevent contamination resulted in suspending elective procedures for Brazilian dental

care services, and maintaining only urgent care²⁶. This measure affected PHC and Dental Specialty Center services²⁶, and resulted in a considerable drop in the average number of cancer diagnoses in all Brazilian regions, as of the start of the pandemic²⁷. This outcome reinforces the importance of teledentistry²⁷ as a valuable tool in the initial assessment and diagnosis of potentially malignant disorders and early-stage oral cancer¹⁶, and also of telemonitoring². Dentists place high expectations on a system that allows communication with a specialist, mainly in oral and maxillofacial pathology^{3,20}. Therefore, PHC professionals must have high levels of satisfaction toward the program, as well as a program that works well, so that both program and professionals can better support the population.

Limitations of this study involve use of a secondary database, since the reasons for dissatisfaction and data loss from lack of PHC professional feedback cannot be investigated. Future research delving into the reason for the satisfaction/dissatisfaction of professionals should clarify these issues and gear actions toward improving the program results. Also, new investigation after the initial period of the pandemic should assess its impact on these results.

CONCLUSIONS

PHC dentists showed low satisfaction rates for the asynchronous dental teleconsulting of the Telehealth Brazil Networks Program in 2020. Professionals giving patient referral feedback, and reporting that teleconsulting avoided having to refer patients to other care levels were more likely to be satisfied with the teleconsultant's answer. Dentists submitting oral medicine questions were significantly less satisfied with the teleconsulting feedback.

Feedback from PHC professionals must be encouraged to enable better evaluation of the program.

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Table 1- Descriptive analyses of the Telehealth Brazil Networks Program dental teleconsulting profile (2020)(N=1,719)

Variable	Frequency N(%)
<i>Satisfaction</i>	
Dissatisfied/Neither satisfied nor	1260(73.3)
Satisfied	459(26.7)
<i>Avoided referral*</i>	
Yes	862(65.0)**
No	464(35.0)**
<i>Sex*</i>	
Female	1011(59.7)**
Male	683(40.3)**
<i>Dentist specialty</i>	
Family Health Strategy	950(55.3)
General dental practitioner	646(37.6)
Specialist	123(7.2)
<i>Time of question</i>	
Within working hours	1402(81.6)
Outside working hours	317(18.4)
<i>Time of answer</i>	
Within working hours	1170(68.1)
Outside working hours	549(31.9)
<i>Dental field</i>	
Semiology	570(33.2)
Clinical dentistry	564(32.8)
Services	348(20.2)
Oral medicine	122(7.1)
Health Promotion and Prevention	94(5.5)
Pharmacology	21(1.2)

*Variables with missing data

**Values for valid data

Table 2- Factors associated with Telehealth Brazil Networks Program dental teleconsulting satisfaction (2020)

Variable	Frequency of satisfaction	Unadjusted (95%CI)	OR	p-value	Adjusted (95%CI)	OR	p-value
<i>Sex*</i>							
Male	26.5%	0.99(0.80 -1.24)		0.961	-		
Female	26.6%	1					
<i>Dental specialty</i>							
Family Health Strategy	28.8%	1.25(1.00-1.57)		0.053			
Specialist	22.0%	0.87(0.55-1.38)		0.551	-		
General dental practitioner	24.5%	1					
<i>Time of question</i>							
Outside working hours	26.8%	1.01(0.77-1.33)		0.960	-		
Within working hours	26.7%	1					
<i>Time of answer</i>							
Outside working hours	26.8%	1.01(0.80-1.26)		0.962	-		
Within working hours	26.7%	1					
<i>Avoided referral*</i>							
Yes	28.1%	1.58(1.20-2.07)		0.001	1.55(1.17-2.04)		0.002
No	19.8%	1			1		
<i>Dental field</i>							
Semiology	31.4%	1.21(0.94-1.56)		0.148	1.22(0.89-1.68)		0.213
Services	31.1%	1.19(0.78-1.83)		0.415	1.04(0.64-1.71)		0.864
Oral medicine	18.7%	0.61(0.44-0.84)		0.003	0.61(0.43-0.87)		0.006
Health Promotion and Prevention	19.1%	0.63(0.36-1.08)		0.092	0.65(0.36-1.19)		0.164
Pharmacology	19.0%	0.62(0.21-1.87)		0.398	0.67(0.19-2.38)		0.534
Dental clinic	27.5%	1			1		

*Variables with missing data

4.3 Artigo 3

Este artigo será submetido ao periódico *PlosOne* (QUALIS A1/ IF:3.752).

TITLE: Factors associated with avoiding referrals by dental teleconsulting sessions in Brazil

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ABSTRACT

This cross-sectional analytical study assessed the frequency of avoided referrals by dental teleconsulting and its association with individual and contextual variables, using a multilevel approach. It appraised asynchronous dental teleconsulting sessions from the secondary database of the Monitoring and Evaluation System of the Telehealth Results during 2020. The dependent variable was: "If referral to secondary care was avoided". Individual variables were the ones related to teleconsulting and professionals that requested it: sex, dentist specialty and dental field. Contextual variables were the ones related to each municipality that requested questions: Municipal Human Development Index, Oral Health teams in Primary Health Care coverage, Dental Specialty Centers coverage, Illiteracy rate, Gini Index, Longevity and Per capita income. A descriptive analysis was made using the Statistical Package for the Social Sciences. Hierarchical Linear and Nonlinear Modeling Software was used to perform the multilevel analyses to assess the association of individual and contextual variables with avoiding patient referral to other care levels. Most teleconsulting sessions avoided patient referral to other care levels (65.1%). Contextual variables explained 44.23% of the variance in the outcome. Female dentists had higher chance of avoiding patient referral compared to male dentists (OR=1.74; CI=0.99-3.44; p=0.055). Also, an increase of one percentage point in OHT/PHC coverage of municipalities increases the chance of avoiding patient referral by 1% (OR=1.01; CI=1.00-1.02; p=0.02). Teleconsulting sessions were efficient in avoiding patient referral to other care levels. Both contextual and individual factors were associated with avoided referrals by teleconsulting sessions.

Keywords: Telemedicine. Telehealth. Primary Health Care. Public Health Dentistry. COVID-19.

INTRODUCTION

The stimulation of mechanisms for the gatekeeping of Primary Health Care (PHC) and regulation of referrals to specialized care is a global problem¹. In Brazil, its continental dimension and the heterogeneous health services coverage consists of significant challenges to achieving equity and high quality in healthcare throughout the country¹. In this scenario, the Brazilian PHC is responsible for the organization and guidance of the oral health demands, acting as the entry point for initial care and solving most population problems². When a health condition cannot be treated in the PHC, it must be referred to other levels of care, such as secondary care services, which offer specialized care³.

However, despite implementing strategies over the years to overcome these obstacles, the Unified Health System (Sistema Único de Saúde – SUS) network in PHC is quite diverse in structure and financing¹, including the dental care services⁴. In addition, specialized care services are not sufficiently provided by many municipalities^{1,3}, being restricted to one or a few larger cities in each state¹, including the Dental Specialty Centers (DSCs), which present heterogeneous distribution throughout the country regions³. This scenario results in long-distance travel, difficulty managing long waiting lists³, and hampered communication between PHC professionals and specialists¹.

One of the strategies for supporting PHC and the referral management systems is the adoption of Telehealth initiatives¹, which involves using technological resources for communication in health area⁵. It is called Teledentistry and can be applied to remote communication between patients and professionals (teleconsultation). It allows teletriage, telediagnosis, and monitoring of the progress of treatment outcomes (telemonitoring)^{6,7}. Among the benefits of its incorporation into health systems may be considered the reduction of unnecessary referrals to specialized care and, consequently, optimization of resources⁸ and reduction of waiting for lines⁹. These initiatives have become even more critical in the context of the COVID-19 pandemic in 2020¹⁰; once, Telehealth and Teledentistry could avoid needless displacements, offering remote triaging of patients, contributing to social distancing¹¹.

In Brazil, the Ministry of Health implemented a Nationwide initiative of Telehealth in 2006 to strengthen PHC and increase access to specialized health in the country, which is currently known as the Telehealth Brazil Networks Program^{12,13}. Unlike other countries' initiatives, in Brazil, the remote communication provided by Telehealth is not allowed to occur directly between patients and health professionals¹⁴. Resolution n°226/2020 from the Federal Council of Dentistry during the COVID-19 pandemic allowed the telemonitoring and teleadvice to guide the best moment to attend to the patients¹⁵. One of the powerful Telehealth Program strategies is teleconsulting, which consists of remote communication between the PHC professional and a specialist in a specific area, called teleconsultant. They exchange information about clinical care, health promotion actions, and the work process. It may occur by messaging or videoconferences synchronously or by asynchronous text messages that must be answered within 72 hours. The offer of teleconsulting is the responsibility of telehealth centers, mostly linked to federal universities, potentially covering all Brazilian PHC^{13,16,17}. In this way, teleconsulting sessions can potentially contribute to the reduction of unnecessary referrals to other care levels, optimizing the resolution of demands compatible with the attributions of PHC⁵. It may contribute to the flow of the referral system, reduce the waiting time for treatment, increase the effectiveness of PHC and access to services, and favor the continuing education of professionals^{5,11,18-20}.

Considering the challenges in the Brazilian healthcare scenario, it is of great importance to evaluate the resoluteness of dental teleconsulting sessions of the Telehealth Program in avoiding unnecessary referrals and its associated factors to evidence possible gaps and areas for the implementation of policies that tackle inequalities. Thus, the objective of this study was to assess the prevalence of patient referrals avoided by dental teleconsulting sessions and their association with individual and contextual variables using a multilevel approach. The null hypothesis was that the prevalence of avoiding patient referral to other care levels by the teleconsulting sessions does not differ between municipalities and also individual factors.

MATERIALS AND METHODS

A cross-sectional analytical study that appraised asynchronous dental teleconsulting sessions from the secondary database of the Telehealth Brazil Networks Program during 2020 was conducted. Data collection used an integrative platform, which contains information on telehealth centers in the Telehealth Program: the Monitoring and Evaluation System of the Telehealth Results (SMART - in Portuguese, Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde)²¹. Codes from the International Classification of Diseases (ICD-10) and the International Classification of Primary Care 2 (ICPC-2) applied to dentistry were used to filter data²². Only questions requested by dentists that had information about the referral or not of a patient were analyzed. The Research Ethics Committee of the Universidade Federal de Minas Gerais (UFMG) approved the research protocol under CAAE 17400319.9.0000.5149.

The study outcome was the referral avoidance to other care levels after each teleconsulting session. At this time, the feedback given by the PHC professional was dichotomized into: Yes/No. The covariables were structured on an individual (level 1) and contextual levels (level 2)²³⁻²⁶ (table 1).

IBM Statistical Package for Social Sciences, v 22.0 (IBM SPSS Statistics for Windows, Armonk, NY, USA) was used to perform descriptive analysis, and Hierarchical Linear and Nonlinear Modeling Software (HLM 6.08 statistical package) to perform a multilevel analysis to assess the association of individual and contextual variables with avoiding patient referral to other care levels. The analysis included 1,319 teleconsulting sessions (level 1) from 279 municipalities (level 2). Parameters were estimated using the restricted maximum likelihood method and predictive quasi-likelihood estimation. A multilevel logistic regression model was built. In the first stage, a null model estimated the primary partition of data variability between two levels, and then the individual and contextual characteristics were considered. The variance partition coefficient (VPC) was calculated to determine how much variance in the outcome stems from the municipalities' differences. To test the association between the outcome and the covariables of levels 1 and 2, each one of them was individually incorporated into the model before being tested, using Student's t-test ($p < 0.05$). The multilevel model was constructed with the variables that achieved a $p < 0.25$. The p-values, odds ratios (ORs), and 95%

confidence intervals (95% CI) were estimated in each analysis. The reliability estimate was used to determine the adequacy of the final multilevel model. All variables theoretically associated with the outcome were kept in the final model.

RESULTS

Teleconsulting sessions avoided patient referral to other care levels in 65.1% of the cases. Most of the PHC professionals that requested the teleconsultings were female (65.3%) and from FHS specialty (47.8%), followed by a general dental practitioner (43.8%). Semiology/Pharmacology/Stomatology was the dental field with the significant demand (45.7%), followed by General dentistry (40.6%) (Table 2).

Contextual variables were descriptively analyzed in table 3. The null model indicated differences in the frequency of avoidance of referral of patients to other care levels by the teleconsulting sessions between the 279 municipalities assessed in this study ($p = 0.000$) (table 4). In the final model, the contextual variables explained 44.23% of the variance in avoided patient referral to other care levels.

The final adjusted multilevel analysis ($n=1319$) indicated that female dentists had a higher chance of avoiding patient referral than male dentists (OR=1.74; CI=0.99-3.44; $p=0.055$). Also, an increase of one percentage point in OHT/PHC coverage of municipalities increases the chance of avoiding patient referral by 1% (OR=1.01; CI=1.00-1.02; $p=0.020$) (table 4).

DISCUSSION

This study evidenced that most of the teleconsulting sessions requested in 2020 avoided referring patients to other care levels. It reinforces the great potential of dental teleconsulting in contributing to the effectiveness of PHC and goes along with previous observations about the Telehealth Program, which has been shown to avoid unnecessary referral of patients and the reduction of waiting lines, consequently improving the resoluteness of PHC^{1,5,18-20,27}. Female dentists and better coverage of OHT/PHC exhibited more chance of avoiding the referral of patients to other care levels by teleconsulting.

This study is intended to nationally assess potentially associated factors with avoiding referrals by the Brazilian dental teleconsulting. In this way, it brings new and essential information on the subject that might contribute to achieving a more resolute Program and PHC. The period selected for the data collection is also vital once it marks the beginning of the COVID-19 pandemic, responsible for creating a new obstacle to access the health services due to the social distancing measures, which generated a repressed demand for treatments in the population²⁸.

Even though there are still low rates of utilization of Teledentistry services^{19,20}, within the modalities offered by the Telehealth Program in the support for professionals, the asynchronous teleconsulting sessions have been reported to be one of the most offered and used^{29,30,31}. Thus, this presents great potential to contribute to the resoluteness of PHC. Teleconsultants help clarify PHC professionals' doubts and confirm patients' diagnoses, qualifying them for the referral process^{16,31}, saving resources, time, and stress³².

As observed in previous studies, female dentists were the ones who demanded most of the teleconsulting sessions³³⁻³⁵, reflecting women's excellent adherence to the Program³³ or their higher prevalence in the service^{20,33}. It was observed an association between the sex of PHC professionals and the prevalence of avoided referral of patients, in which women had 1.74 more chance of avoiding it compared to male dentists. In a study involving health students and workers, female professionals were more likely to use the internet for finding, comparing, and assessing health-related services and information³⁶. Also, the search for health care assistance is higher for women³⁶, who are more likely to lead a healthy lifestyle and be committed to health-enhancing behaviours³⁸. In this way, it might be suggested that women tend to be more cautious concerning healthcare, which could influence their attitudes during teleconsulting sessions.

The significant requests for teleconsulting from FHS dental surgeons and general dental practitioners were expected due to the Brazilian PHC profile³⁹, and the majority of questions related to Semiology/Pharmacology/Stomatology, followed by General dentistry, reflect conditions constantly present in PHC attendances. In Brazil, PHC is

responsible for organizing and guiding the oral health demands and solving most population problems². The great potential of teleconsulting sessions should be more explored in a national context of disparities and difficulties in the relationship between primary and secondary care throughout the country, with long queues for specialties such as endodontics, oral surgery, and periodontics³ (included in general dentistry). In addition, high demand for stomatology questions^{20,33,35} has been previously reported, accompanied by the difficulty in diagnosing oral diseases in PHC^{16,20,33,34}, low rate of procedures for the early detection of oral cancer in OHT, and many municipalities in the country without reference services for stomatology cases⁴⁰.

The null hypothesis of this study was rejected once the null model indicated a difference in the prevalence of avoiding referrals of patients to other care levels by the teleconsulting sessions in the 279 municipalities assessed. The variables at the contextual level partly explained the variance in the outcome. Telehealth utilization by PHC professionals can be influenced by contextual factors, such as the organization of local health systems and services, the size of municipalities, institutional support, and the Program implantation. Heterogeneous incorporation of the Telehealth Program in Brazilian territory must be considered to improve the effectiveness and efficiency of Program³⁰.

The coverage of OHT/PHC presented an association with the prevalence of avoided referrals by teleconsulting. The increase of one percentage point in OHT/PHC coverage of municipalities increased the chance of avoiding patient referral by 1%. Municipalities with better coverage of OHT/PHC are expected to have a more organized PHC network, which could reflect better potential patient access and better capacity to solve problems. The insertion of the OHT in FSH restructured the PHC model and reordered the health action planning in the public sector, focusing on the territorial and epidemiological needs of the population³⁸. Better FHS coverage is related to better health conditions and is suggested to decline hospitalization rates⁴¹.

It is crucial to notice that 75% of the municipalities that requested teleconsulting showed rates of DSC/1,000,000 inhabitants of 0.00. In comparison, most of them exhibited reasonable OHT/PHC coverage rates: the

median of OHT/PHC coverage was 76.52%, and P75% of the municipalities that requested teleconsulting showed an OHT/PHC coverage of 100%. However, 25% of the municipalities (P25%) still present OHT/PHC coverage under 41.55%. This rate reinforces the necessity of a resolute PHC in the country² in a context of significant variability in healthcare coverage^{3,30,38,40} to better assist the Brazilian population. Also, it reaffirms the great potential of teleconsulting sessions as an essential strategy in this process. Telehealth presents the potential to improve the resoluteness of PHC, shorten distances within levels of attention and reduce health inequities^{27,30}.

Another point of interest is discrepancies in the performance^{42,43} and infrastructure⁴ of procedures by the OHT/PHC between Brazilian regions. It has been shown that continuing professional development, further education, and a better qualification of PHC professionals are related to better OHT performances resulting in better care for patients⁴⁴. In this sphere, Telehealth strategies must be stimulated once it provides access to a variety of continuing professional activities, such as teleconsulting, contributing to increasing the resolution capacity in PHC.

Limitations of this study are related to the use of secondary data, which hindered the more profound collection of information, whether the avoided referral was unnecessary, and the loss of data due to the lack of PHC professionals' feedback on the platform. The period analyzed was very atypical because of the COVID-19 pandemic, characterized by new challenges in the daily practice of healthcare services. In this way, future studies are needed to explore these issues further and direct interventions to improve the Telehealth Program results.

CONCLUSION

Teleconsulting sessions avoided most patient referrals to other care levels. The contextual variables partly explained the differences in the prevalence of avoided referrals. Female dentists and municipalities with better OHT/PHC coverage had higher chances of avoiding patient referral to other care levels by teleconsulting sessions. It is essential to focus on strategies to increase the equity in OHT/PHC coverage in Brazilian municipalities, to better

support both professionals and patients, and increase the resoluteness of the Telehealth Program.

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Table 1 - Description of each independent variable according to the level of analysis from dental teleconsulting sessions, Brazil, 2020.

Level	Variable	Description
Level 1 Individual ^a	- Sex	Male-Female
	Dentist specialty	Family Health Strategy (FHS)
		General dental practitioner
		Specialist
	Dental field	General dentistry (Dentistry, Endodontics and Periodontics specialties)
		Semiology (diagnosis and systemic diseases)/Pharmacology (prescription of medications and its adverse effects)/ Oral medicine (oral lesions)
Services (patient referral, the health system, service operation and administrative processes)		
Health Promotion and Prevention (Oral health instruction and preventive habits and practices)		
Level 2 Contextual ^b	- mHDI ²³	Municipal Human Development Index (0-1)
	Oral health teams in Primary Health Care coverage ²⁴	Annual mean percentage (%) of population covered by OHT/PHC.
	Dental Specialty Centers coverage ²⁵	Rate of DSC/1,000,000 inhabitants
	Illiteracy rate ²⁶	Illiteracy rate of each municipality
	Gini Index ²⁶	Gini Index (0-1)
	Longevity ²⁶	Life expectancy at birth
	Per capita income ²⁶	Per capita income of each municipality

^a Data extracted from each teleconsulting session: dentist and teleconsulting-related factors.

^b Data from each municipality that requested teleconsulting session.

Table 2 - Descriptive analysis of individual variables from dental teleconsulting sessions, Brazil, 2020.

Variables	N	%
<i>Dependent variable</i>		
<i>Teleconsulting session avoided patient referral to other care levels</i>		
Yes	859	65.1
No	460	34.9
<i>Independent variables (individual level)</i>		
<i>Sex</i>		
Female	861	65.3
Male	458	34.7
<i>Dentist specialist</i>		
Family Health Strategy	631	47.8
General dental practitioner	577	43.8
Specialist	111	8.4
<i>Dental field</i>		
Semiology/Pharmacology/Stomatology	603	45.7
General dentistry	535	40.6
Services	96	7.3
Health Promotion and Prevention	85	6.4

Table 3 - Descriptive analysis of contextual variables, from municipalities (n=279) that requested teleconsulting sessions, Brazil, 2020.

Variables*	p-value	P25%	P50%	P75%
mHDI	0.000	0.602	0.675	0.721
OHT/PHC coverage	0.000	41.55	76.52	100.00
Dental Specialty Centers coverage	0.000	0.00	0.00	0.00
Illiteracy rate	0.000	7.90	12.30	21.90
Gini Index	0.012	0.450	0.500	0.540
Longevity	0.001	71.42	73.67	75.01
Per capita income	0.000	290.99	493.59	674.12

*Values for 279 municipalities; p-value = Kolmogorov-Smirnov normality test; P=Percentile

Table 4 – Table 4 - Final estimation of variance components in the multilevel analysis (“null-model”)

Random Effect	Standard Deviation	Variance component	f	Chi-square	P-value
Intercept, U0	1.61533	2.60929	277	655.89	<0.001

Table 5 - Multilevel models (unadjusted and adjusted) for variables of individual (n = 1,319) and contextual levels associated with avoiding patient referral to other care levels. Brazil, 2020.

Variables	Avoided referral (%)	Unadjusted OR*	95% CI	p	Adjusted OR*	95% CI	p
Individual Level							
<i>Sex</i>							
Male	51.1	1					
Female	72.6	1.74	0.95-3.18	0.073	1.84	0.99-3.44	0.055
<i>Dentist specialist</i>							
Family Health Strategy	68.6	1			1		
General dental practitioner	61.0	1.05	0.57-1.94	0.870	0.98	0.53-1.82	0.949
Specialist	66.7	1.13	0.41-3.09	0.813	1.18	0.43-3.29	0.745
<i>Dental field</i>							
General dentistry	73.8	1			1		
Semiology/Pharmacology/ Stomatology	30.0	0.82	0.50-1.32	0.407	0.78	0.48-1.27	0.318
Services	56.2	0.77	0.36-1.64	0.496	0.74	0.34-1.60	0.445
Health Promotion and Prevention	40.0	0.85	0.34-2.13	0.722	0.78	0.31-1.98	0.606
Contextual Level							
mHDI		6.78	0.14-333.33	0.332	0.000258	0.00-0.04	0.159
OHT/PHC coverage		1.01	1.00-1.02	0.016	1.01	1.00-1.02	0.020
Dental Specialty Centers coverage		0.99	0.98-1.01	0.424	0.99	0.98-1.01	0.349
Illiteracy rate		0.99	0.96-1.02	0.524	1.00	0.96-1.03	0.928
Gini Index		0.09	0.00-5.68	0.257	0.42	0.00-58.8	0.729
Longevity		1.03	0.92-1.16	0.550	0.96	0.78-1.18	0.710
Per capita		1.00	0.99-1.00	0.816	1.00	0.99-1.00	0.197

5 CONSIDERAÇÕES FINAIS

O uso de serviços de Telessaúde é associado a uma melhor qualidade do cuidado em saúde, contribuindo para a integralidade dos atendimentos, além de aumentar sua acessibilidade e resolutividade. Em um contexto de um país de dimensões continentais como o Brasil, marcado por grandes diversidades regionais socioeconômicas e em relação ao acesso da população aos serviços de saúde especializados, as Teleconsultorias apresentam-se como uma forma de suporte à APS.

O artigo 1 evidenciou importantes aspectos em relação às Teleconsultorias Odontológicas realizadas no país no ano de 2019. As diferentes demandas por teleconsultorias observadas entre as macrorregiões do país são consistentes com suas diferenças regionais. As especialidades Odontológicas que mais demandaram teleconsultorias refletem o perfil da APS no Brasil, e a maior prevalência de dúvidas relacionadas à semiologia reflete dificuldades no diagnóstico e manejo de pacientes com alterações sistêmicas. O sistema responde dentro do tempo limite estipulado. O retorno da avaliação dos profissionais sobre o programa e o uso do SMART são fundamentais para o entendimento do impacto das teleconsultorias como uma forma de suporte à APS.

O artigo 2 obteve resultados preocupantes, uma vez que os dentistas da APS apresentaram baixos níveis de satisfação com as teleconsultorias odontológicas assíncronas em 2020, período de pandemia. Entre os profissionais que deram o *feedback* sobre a teleconsultoria ter evitado ou não o encaminhamento dos pacientes para outros níveis de atenção, os que responderam que o encaminhamento foi evitado apresentaram maior chance de estarem satisfeitos com a resposta recebida do teleconsultor. Além disso, os dentistas que enviaram perguntas da área de estomatologia apresentaram significativamente menos satisfeitos com a resposta recebida da teleconsultoria. É importante estimular o *feedback* dos profissionais da APS para melhor avaliar o Programa.

O artigo 3 evidenciou informações que reforçam o potencial das teleconsultorias como uma ferramenta para a melhoria da resolutividade de APS. A maior parte das teleconsultorias odontológicas assíncronas realizadas em 2020 evitou o encaminhamento de pacientes para outros níveis de atenção. Os municípios que solicitaram as teleconsultorias apresentaram diferentes prevalências de

encaminhamento evitado e as covariáveis contextuais e individuais explicaram essa variabilidade. Dentistas do sexo feminino e municípios com melhor cobertura de ESF/APS apresentaram maiores chances de evitar o encaminhamento dos pacientes após as teleconsultorias.

Uma das limitações do estudo é o uso de dados secundários, que não permitiu o aprofundamento sobre algumas questões como, por exemplo, o fato do encaminhamento do paciente para outro nível de atenção ser necessário ou não em cada caso, assim como os motivos para a satisfação/insatisfação dos profissionais com as teleconsultorias. Houve também perda de dados devido à falta do *feedback* dos profissionais na plataforma, comprometendo uma análise completa dos dados. Além disso, o SMART ainda é pouco utilizado por alguns núcleos de Telessaúde, dificultando a avaliação do impacto do Programa no Brasil. Outro aspecto a ser considerado é a impossibilidade de se identificar possíveis fatores causais neste tipo de estudo.

Estudos futuros serão necessários para nova avaliação da satisfação dos profissionais com as teleconsultorias odontológicas assíncronas e fatores associados, que permitam avaliar melhor o impacto das mudanças e dificuldades trazidas pela pandemia do COVID-19 no dia-a-dia dos profissionais assistidos pelo Programa Telessaúde. Estudos relacionados à resolutividade das teleconsultorias após a implementação da ESD também são importantes, com o intuito de evidenciar lacunas, monitorar o funcionamento do serviço e traçar estratégias para alcançar um apoio de qualidade cada vez maior aos profissionais e pacientes na APS do Brasil. Neste contexto poderiam ser realizados estudos qualitativos junto aos profissionais da APS que utilizam as teleconsultorias. Seria interessante que o Programa Telessaúde e a Plataforma SMART acrescentassem nas ferramentas de avaliação já existentes questões que permitissem o aprofundamento na análise do motivo da satisfação/insatisfação dos profissionais da APS, assim como o do encaminhamento ou não dos pacientes para outras unidades de atendimento. A possibilidade de avaliação do *feedback* dos profissionais da APS por meio de respostas dissertativas poderia ajudar na interpretação dos dados. Além disso, o incentivo do *feedback* dos profissionais é de grande importância no processo para a avaliação do Programa.

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ANEXO A – Solicitação para acesso aos dados das teleconsultorias odontológicas assíncronas por meio do SMART

13/06/2022 15:47

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

CONTROLADORIA-GERAL DA UNIÃO

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação


[Entrar \(../Login/identificacao.aspx\)](#)
[Cadastrar \(../Usuarios/AutoCadastro/UsuarioCidadao.aspx\)](#)

Consultar Manifestação

Respostas ▲

12/12/2019
08:38

Tipo
Resposta Conclusiva

Responsável
Coordenação Geral De Política E Inovação

Decisão
Acesso Concedido

Especificação da decisão
Resposta solicitada inserida no Fala.Br

Destinatário Recurso 1º

Prazo para reocorrer
23/12/2019

Anexos
Não existem anexos

Prezada cidadã,

Relativo ao seu pedido de Informação, informamos que O Laboratório De Inovação Tecnológica Em Saúde (LAIS) DA UFRN, detentores da plataforma, para realizar a extração dos dados solicitados necessitam que seja informada a lista dos CIDs e CIAPS que compõem a área odontológica. Os temas das teleconsultorias são organizados em CID e/ou CIAP, necessitando assim a lista específica para filtrar na área odontológica.

Esclarecemos que quanto aos tipos de dúvidas endodônticas mais frequentes esta informação não está disponível no smart, visto que o conteúdo da pergunta e da resposta é um campo obrigatório e que ainda não é enviado por nenhum núcleo de telessaúde.

Portanto, para atendê-la, solicitamos que envie a lista dos CIDs e CIAPS que

Teor ▲

Resumo
Autorização para acesso de dados do Programa Telessaúde - Plataforma SMART
Fale aqui

Meu nome é Ligia (<http://attes.cnpq.br/1481315275445738>) e sou aluna de doutorado em Odontologia na UFMG. Durante o mestrado, desenvolvi minha dissertação avaliando o Programa Telessaúde em Minas Gerais, analisando as teleconsultorias offline realizadas na área da Odontologia.

Em 2017, participei com a minha orientadora, Renata Martins (<http://attes.cnpq.br/9830587097758541>) do 8º CTBMS, onde conhecemos o Jetro Silva, que nos apresentou a plataforma SMART.

Ficamos muito interessadas, pois os bancos de dados de MG passaram por uma grande perda de informações nos últimos anos. Acreditamos ser de grande valor iniciativas que buscam avaliar programas públicos, pois contribuem para a revisão de metas, aperfeiçoamento e benefícios, tanto para os profissionais que o utilizam, quanto para a população. Então, para o doutorado, estruturamos um projeto para avaliar os dados de todo o Brasil.

O projeto já foi aprovado pelo colegiado de pós-graduação da UFMG, assim como pelo Comitê de Ética em Pesquisa da UFMG.

Estabelecemos contato com o Jetro e Marcos Pelico anteriormente relatando sobre nosso projeto e a possibilidade da cessão dos dados. Contudo, o Marcos nos informou que havia ocorrido uma mudança na gestão do Programa, que agora está sob os cuidados do Departamento de Saúde Digital.

Gostaríamos de solicitar a autorização para que possamos acessar os dados contidos no SMART referentes às teleconsultorias offline Odontológicas, considerando o período de 2017 a 2020.

Pensamos em utilizar as variáveis: Região do país, Estado e Núcleo de Telessaúde de origem da Teleconsultoria; Sexo e profissão do solicitante; Data e horário das perguntas e respostas; Tempo até a resposta; Área Odontológica da dúvida e tipos de dúvidas endodônticas mais frequentes (subárea); Satisfação com a resposta; Resolutividade do serviço (se o encaminhamento do paciente foi evitado quando havia essa intenção); selecionadas pelo site: http://smart.telessaude.ufm.br/webapp/api_docs/.

Desde já agradeço.

13/06/2022 15:47

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

Anexos Originais

Nome

PB_PARECER_CONSUBSTANCIADO_CEP_3662611 (1).pdf

Aprovação Projeto Ligia.pdf

Manifestação

Tipo de manifestação

Acesso à Informação

Número

25820.008939/2019-16

Esfera

Federal

Órgão destinatário

MS - Ministério da Saúde

Serviço

-

Órgão de interesse

-

Assunto

Outros em Saúde

Subassunto

-

Tag

-

Data de cadastro

07/11/2019

Prazo de atendimento

12/12/2019

Situação

Concluída

Registrado por

Órgão

Modo de resposta

Pelo sistema (com avisos por email)

Canal de entrada

Internet

ANEXOS

Anexos da Manifestação

 Origem

Nome

Extensão

 Anexo Manifestação

PB_PARECER_CONSUBSTANCIADO_CEP_3662611 (1).pdf

pdf

 Anexo Manifestação

Aprovação Projeto Ligia.pdf

pdf

Download

Históricos de ações

Histórico de ações

Data/Hora	Ação	Responsável	Informações Adicionais
07/11/2019 22:13	Cadastro	Órgão	
02/12/2019 18:37	Promulgação	Órgão	
12/12/2019 09:36	Registro Resposta	Órgão	
23/12/2019 11:54	Resposta a Pesquisa	Órgão	Referente à resposta conclusiva de 12/12/2019

Encomendamentos

Não foram encontrados registros.

Promoções

13/06/2022 15:47

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

Data/Hora	Prazo		Responsável	Motivo	Justificativa
	Original	Novo Prazo			
02/12/2019 18:37	02/12/2019 23:59	12/12/2019 23:59	Órgão	Indisponibilidade temporária da informação	Prezada Cidadã, Informamos que seu pedido encontra-se em análise, e demandará mais tempo para a resposta. Atenciosamente,
Respostas as pesquisas de satisfação					
Data/Hora	Referência	Respostas			
23/12/2019 11:54	12/12/2019 09:36	A resposta fornecida atendeu plenamente ao seu pedido? 4 A resposta fornecida foi fácil de compreender? Muito fácil de compreender			

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13/06/2022 15:14

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

CONTROLADORA-GERAL DA UNIÃO

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação[Entrar \(.J./Login/Identificacao.aspx\)](#) [Cadastrar \(.J/Uuarios/AutoCadastroUuarioCidadao.aspx\)](#)

Consultar Manifestação

Respostas ▼

17/05/2020
22:58

Tipo
Resposta Conclusiva

Responsável
DEPARTAMENTO DE SAÚDE DIGITAL-DESD/SEMG

Decisão
Acesso Concedido

Especificação da decisão
Resposta solicitada inserida no Fala.Br

Destinatário Recurso 1º

Prazo para recorrer
28/05/2020

Anexos
Não existem anexos

EM RESPOSTA A DEMANDA

ATRAVÉS DE E-MAIL, FOI FEITA A COMUNICAÇÃO COM A SOLICITANTE E LIBE CONSEGUIR OS DADOS SOLICITADOS, ALÉM DISSO, FOI FEITO CONTATO CO SMART NA UFRN PARA DISPONIBILIZAR OS DADOS COM RELAÇÃO AOS C SOLICITANTE.

AS DEMAIS COMUNICAÇÕES, ESTÃO SENDO FEITAS DIRETAMENTE POR E-MAI

Teor ▲

Resumo
Autorização para acesso de dados do Programa Telessaúde - Plataforma SMART

Fale aqui
Meu nome é Ligia (<http://lattes.cnpq.br/1481315275445738>), sou aluna de doutorado em Odontologia na UFMG. Durante o mestrado, avalei o Programa Telessaúde em MG, analisando as teleconsultorias offline realizadas na área da Odontologia. Em 2017, participei com a minha orientadora, Renata Martins (<http://lattes.cnpq.br/9830587097759541>) do 8º CTBMG, onde conhecemos o Jetro Silva, que nos apresentou a plataforma SMART. Ficamos muito interessadas, pois os bancos de dados de MG passaram por uma grande perda de informações nos últimos anos. Acreditamos ser de grande valor iniciativas que buscam avaliar programas públicos, pois contribuem para a revisão de metas, aperfeiçoamento e benefícios, tanto para os profissionais que o utilizam, quanto para a população. Então, para o doutorado, estruturamos um projeto para avaliar os dados de todo o Brasil, que já foi aprovado pelo colegiado de pós-graduação da UFMG, assim como pelo Comitê de Ética em Pesquisa da UFMG. Recentemente solicitamos por meio do protocolo 25820008939201916, ao Departamento de Saúde Digital, autorização para que possamos acessar os dados contidos no SMART referentes às teleconsultorias offline Odontológicas, considerando o período de 2017 a 2020. As variáveis necessárias seriam: Região do país, Estado e Núcleo de Telessaúde de origem da Teleconsultoria; Sexo e profissão do solicitante; Data e horário das perguntas e respostas; Tempo até a resposta; Área Odontológica da dúvida e tipos de dúvidas endodônticas mais frequentes (subárea); Satisfação com a resposta; Resolutividade do serviço (se o encaminhamento do paciente foi evitado quando havia essa intenção); selecionadas pelo site: http://smart.telessaude.ufm.br/webapp/api_docs/. Contudo, o banco fornecido foi gerado com erros, e fomos orientadas a realizar uma nova solicitação. Segue aprovação do Projeto no COEP e lista solicitada com códigos de CID e CIAP odontológicos. Desde já agradeço.

Anexos Originais

13/06/2022 15:14

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

Nome

CID 10 relacionados à Odontologia.doc

Lista CIAP Odontologia.doc

PB_PARECER_CONSUBSTANCIADO_CEP_3662611 (1).pdf

Manifestação**Tipo de manifestação**

Acesso à Informação

Número

25820.003613/2020-28

Esfera

Federal

Órgão destinatário

MS - Ministério da Saúde

Serviço

-

Órgão de interesse

-

Assunto

Outros em Saúde

Subassunto

-

Tag

-

Data de cadastro

27/04/2020

Prazo de atendimento

18/05/2020

Situação

Concluída

Registrado por

Órgão

Modo de resposta

Pelo sistema (com avisos por email)

Canal de entrada

Internet

Anexos**Anexos da Manifestação** Origem**Nome****Extensão** Anexo Manifestação

CID 10 relacionados à Odontologia.doc

doc

 Anexo Manifestação

Lista CIAP Odontologia.doc

doc

 Anexo Manifestação

PB_PARECER_CONSUBSTANCIADO_CEP_3662611 (1).pdf

pdf

[Download](#)**Históricos de ações****Histórico de ações**

Data/Hora	Ação	Responsável	Informações Adicionais
27/04/2020 14:41	Cadastro	Órgão	
17/05/2020 22:56	Registro Resposta	Órgão	

Encaminhamentos

Não foram encontrados registros.

Prorrogações

Não foram encontrados registros.

ANEXO B – Parecer de aprovação do Projeto no COEP

UNIVERSIDADE FEDERAL DE
MINAS GERAIS



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: ANÁLISE NACIONAL DAS TELECONSULTÓRIAS ASSÍNCRONAS DO TELESSAÚDE

Pesquisador: Renata de Castro Martins

Área Temática:

Versão: 2

CAAE: 17400319.9.0000.5149

Instituição Proponente: UNIVERSIDADE FEDERAL DE MINAS GERAIS

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 3.662.611

Apresentação do Projeto:

Trata-se de um estudo transversal cujo objetivo é avaliar as teleconsultorias odontológicas assíncronas do Programa Telessaúde Brasil Redes através de banco de dados, referente aos núcleos de telessaúde do Programa Telessaúde Brasil Redes. Os núcleos de telessaúde, responsáveis pela oferta de teleconsultorias, são implantados em universidades públicas em diversos estados brasileiros. Os instrumentos de avaliação serão as teleconsultorias assíncronas, obtidas de banco de dados secundários do Sistema de Monitoramento e Avaliação de Resultados do Telessaúde (SMART), que integra as informações de serviços prestados pelos Núcleos de Telessaúde que fazem parte do Programa Nacional Telessaúde Brasil Redes no período de 2017 a 2020. O acesso às informações será solicitado ao responsável pela guarda dos dados, com base na Lei nº 12.527, de 18 de novembro de 2011, que regula o acesso a informações em conformidade com os princípios básicos da administração pública da União, Estados, Distrito Federal e Municípios. Esta Lei considera, entre outras prerrogativas, informação como dados, processados ou não, que podem ser utilizados para produção e transmissão de conhecimento, contidos em qualquer meio, suporte ou formato. Serão coletadas as seguintes variáveis independentes: núcleo de Telessaúde, sexo e profissão do solicitante da teleconsultoria (profissional da atenção primária do SUS), data e horário da pergunta e resposta, tempo até a resposta, área odontológica da dúvida da teleconsultoria e tipos de dúvidas mais frequentes. Os dados sobre os estados solicitantes de teleconsultorias: Índice de Desenvolvimento Humano (IDH), Índice de Gini, população e

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Bairro: Unidade Administrativa II **CEP:** 31.270-901

UF: MG **Município:** BELO HORIZONTE

Telefone: (31)3409-4502

E-mail: coep@pppq.ufmg.br

Continuação do Parecer: 3.662.011

macrorregiões do Brasil serão coletados no Instituto Brasileiro de Geografia e Estatística (IBGE) (BRASIL, 2016). Como variáveis dependentes (desfechos do estudo) serão utilizadas as respostas a quatro variáveis mensuradas a partir de perguntas respondidas pelos usuários que solicitam as teleconsultorias no serviço. A primeira será a satisfação do profissional da atenção primária com a resposta da teleconsultoria. A segunda será a efetividade do serviço, avaliada a partir da resposta à pergunta: "Se a teleconsultoria resolveu a dúvida". Já a terceira e a quarta serão sobre a resolatividade do serviço, mensurada a partir da conduta realizada após a teleconsultoria: I) "Se o solicitante tinha a intenção de encaminhar o paciente" (sim ou não); e II) "Se a teleconsultoria evitou o encaminhamento do paciente" (sim, não, não informado). Os dados obtidos serão analisados descritivamente por meio de frequência, análise de Cluster, de série temporal e geoespacial comparando-os entre as macrorregiões brasileiras, nos programas IBM SPSS Software versão 22.0 e Stata versão 15.0, considerando uma significância de 5%.

Objetivo da Pesquisa:

Objetivo Primário: Avaliar as teleconsultorias Odontológicas do Telessaúde Brasil Redes no período de 2017 a 2020. **Objetivo Secundário:** Avaliar a frequência de teleconsultorias assíncronas do Telessaúde Brasil Redes de acordo com núcleo de Telessaúde, sexo e profissão do solicitante da teleconsultoria (profissional da atenção primária do SUS); data e horário da pergunta e resposta (tempo médio gasto até a resposta e demanda dentro do horário de trabalho); área odontológica da dúvida da teleconsultoria, tipos de dúvidas mais frequentes, satisfação dos solicitantes (se a teleconsultoria ajudou) e a resolatividade das teleconsultorias odontológicas do Telessaúde Brasil Redes (se evitou o encaminhamento de pacientes para a atenção especializada) com dados sociodemográficos dos estados e macrorregiões brasileiras (IDH, Índice de Gini e tamanho da população); Avaliar associação entre satisfação dos solicitantes das teleconsultorias odontológicas e resolatividade do serviço do Telessaúde Brasil Redes e as macrorregiões brasileiras.

Avaliação dos Riscos e Benefícios:

Riscos: Há risco de quebra de confidencialidade e anonimato durante a consulta ao banco de dados, no entanto, a consulta será feita sem identificar o nome dos indivíduos, mantendo o sigilo e o cuidado com para a não identificação do sujeito. **Benefícios:** Esta pesquisa contribuirá com conhecimentos sobre como está sendo realizado o Telessaúde no Brasil, sua efetividade e se há diferenças de demandas entre as macrorregiões brasileiras com diferentes IDHM, bem como, entre os estados brasileiros, com o intuito de promover melhorias tanto para os profissionais de saúde da atenção básica do SUS, quanto para os usuários do serviço.

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 UF: MG Município: BELO HORIZONTE
 Telefone: (31)3409-4592 E-mail: coep@prpq.ufmg.br

Continuação do Parecer: 3.002.011

Comentários e Considerações sobre a Pesquisa:

Pesquisa relevante para a área de saúde pública e odontologia, conforme parecer departamental.

Considerações sobre os Termos de apresentação obrigatória:

Foram apresentados:

Folha de rosto devidamente assinada

Parecer departamental aprovado

Projeto completo com termo de anuência / autorização para acesso ao banco de dados do Sistema de Monitoramento e Avaliação dos Resultados do Telessaúde (SMART)

Pedido de dispensa de TCLE

TCUD

Recomendações:

—

Conclusões ou Pendências e Lista de Inadequações:

SMJ sou favorável à aprovação da pesquisa.

Considerações Finais a critério do CEP:

Tendo em vista a legislação vigente (Resolução CNS 466/12), o CEP-UFMG recomenda aos Pesquisadores: comunicar toda e qualquer alteração do projeto e do termo de consentimento via emenda na Plataforma Brasil, informar imediatamente qualquer evento adverso ocorrido durante o desenvolvimento da pesquisa (via documental encaminhada em papel), apresentar na forma de notificação relatórios parciais do andamento do mesmo a cada 06 (seis) meses e ao término da pesquisa encaminhar a este Comitê um sumário dos resultados do projeto (relatório final).

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_1335673.pdf	14/10/2019 10:54:29		Aceito
Outros	Carta_resposta.pdf	14/10/2019 10:52:42	Renata de Castro Martins	Aceito
Declaração de Pesquisadores	TCUD.pdf	14/10/2019 10:52:17	Renata de Castro Martins	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	Pedido_Isencao_TCLE.pdf	05/07/2019 17:37:53	Renata de Castro Martins	Aceito

Endereço: Av. Presidente Antônio Carlos, 6627 2º Ad S/ 2005
 Bairro: Unidade Administrativa II CEP: 31.270-901
 UF: MG Município: BELO HORIZONTE
 Telefone: (31)3409-4502 E-mail: coep@ppq.ufmg.br

UNIVERSIDADE FEDERAL DE
MINAS GERAIS



Continuação do Parecer: 3.002.011

Outros	Aprovacao_projeto.pdf	05/07/2019 17:32:52	Renata de Castro Martins	Aceito
Projeto Detalhado / Brochura Investigador	Projeto_Doutorado_Ligja_COEP.pdf	05/07/2019 17:23:53	Renata de Castro Martins	Aceito
Folha de Rosto	folhaDeRosto_2019.pdf	05/07/2019 17:10:24	Renata de Castro Martins	Aceito

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

BELO HORIZONTE, 25 de Outubro de 2019

Assinado por:
Eliane Cristina de Freitas Rocha
(Coordenador(a))

13/06/2022 15:14

Fala.BR - Plataforma Integrada de Ouvidoria e Acesso à Informação

Respostas as pesquisas de satisfação

Não foram encontrados registros.

[🏠 Voltar à Página Inicial](#)

[Responder Pesquisa](#)

[Imprimir](#) 🖨️

[Voltar ao Topo](#) ^

ANEXO C – Comprovante de aceite do Artigo 1

24/06/2022 13:33

Email – Ligia Cristelli da Paixão – Outlook

----- Forwarded message -----

De: **Saul Paiva** <onbehalf@manuscriptcentral.com>

Date: seg, 2 de mai. de 2022 às 13:45

Subject: Brazilian Oral Research - Decision on Manuscript ID BOR-2021-0914.R2

To: <rcmartins05@gmail.com>

02-May-2022

Dear Dr. Martins:

It is a pleasure to accept your manuscript entitled "National analysis of dental teleconsulting of the Brazilian Telehealth Program" in its current form for publication in the Brazilian Oral Research. The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Thank you for your fine contribution. On behalf of the Editors of the Brazilian Oral Research, we look forward to your continued contributions to the Journal.

Sincerely,
Dr. Saul Paiva
Editor-in-Chief, Brazilian Oral Research
smpaiva@uol.com.br

Associate Editor Comments to Author:

Dear Author,

It is a pleasure to accept your manuscript entitled "National analysis of dental teleconsulting of the Brazilian Telehealth Program" (BOR-2021-0914.R2) in its current form for publication in the Brazilian Oral Research. The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Thank you for your fine contribution. On behalf of the Editors of the Brazilian Oral Research, we look forward to your continued contributions to the Journal.

Reviewer:

The authors agreed with the suggestions, they have incorporated them and I consider this new version ready to be published.

ANEXO D - Normas para publicação artigo 2

Manuscript Submission Guidelines:

Manuscript Submission Guidelines: *Journal of Telemedicine and Telecare*

This Journal is a member of the Committee on Publication Ethics.

This Journal recommends that authors follow the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals formulated by the International Committee of Medical Journal Editors (ICMJE).

Please read the guidelines below then visit the Journal's submission site <http://mc.manuscriptcentral.com/jtt> to upload your manuscript. Please note that manuscripts not conforming to these guidelines may be returned.

Only manuscripts of sufficient quality that meet the aims and scope of *Journal of Telemedicine and Telecare* will be reviewed.

There are no fees payable to submit or publish in this journal.

As part of the submission process you will be required to warrant that you are submitting your original work, that you have the rights in the work, that you are submitting the work for first publication in the Journal and that it is not being considered for publication elsewhere and has not already been published elsewhere, and that you have obtained and can supply all necessary permissions for the reproduction of any copyright works not owned by you.

1. What do we publish?
 - 1.1 Aims & Scope
 - 1.2 Article types
 - 1.3 Writing your paper
2. Editorial policies
 - 2.1 Peer review policy
 - 2.2 Authorship
 - 2.3 Acknowledgements
 - 2.4 Funding
 - 2.5 Declaration of conflicting interests
 - 2.6 Research ethics and patient consent

- 2.7 Clinical trials
- 2.8 Reporting guidelines
- 3. Publishing policies
 - 3.1 Publication ethics
 - 3.2 Contributor's publishing agreement
 - 3.3 Open access and author archiving
- 4. Preparing your manuscript
 - 4.1 Manuscript structure
 - 4.2 Formatting
 - 4.3 Artwork, figures and other graphics
 - 4.4 Supplementary material
 - 4.5 Reference style
 - 4.6 English language editing services
- 5. Submitting your manuscript
 - 5.1 ORCID
 - 5.2 Information required for completing your submission
 - 5.3 Permissions
- 6. On acceptance and publication
 - 6.1 SAGE Production
 - 6.2 Online First publication
 - 6.3 Access to your published article
 - 6.4 Promoting your article
- 7. Further information

1. What do we publish?

1.1 Aims & Scope

Before submitting your manuscript to *Journal of Telemedicine and Telecare*, please ensure you have read the [Aims & Scope](#).

Telemedicine has been defined in general terms to be 'medicine practised at a distance' and as such it encompasses both diagnosis and treatment, as well as medical education. During the last decade certain telemedicine applications, such as videoconsulting and teleradiology, have matured to become essential health-care services. Others, such as telepathology, remain the subject of intensive research effort. The *Journal of Telemedicine and Telecare* is an academic journal that

publishes peer-reviewed papers on all aspects of telemedicine and telecare, including online health and e-health.

1.2 Article Types

The *Journal of Telemedicine and Telecare* publishes contributions under the following headings:

Research

Research is divided into four categories: Original Articles, Systematic Reviews, Preliminary Communications and Case Reports.

Original Articles

Original articles should generally be no longer than 3,000 words for the body of the work, but longer articles may be taken at the editor's discretion. Original articles should be structured with the following headings: Abstract, Introduction, Methods, Results, Discussion, Acknowledgements, and References. The abstract should be a maximum of 250 words and be structured with the subheadings of Introduction, Methods, Results and Discussion.

The Journal publishes the following types of original research, and prefers studies with results that can be generalized beyond the local environment within which the work was performed:

1. Clinical trials of telemedicine applications, i.e. reports of work at a later stage with reportable outcomes rather than the initial validation and demonstration studies of technical feasibility. Comparative studies and economic analyses are encouraged.
2. Work that is primarily technical in focus may be considered, but must be understandable to the general reader and directly relevant to clinical practice. Work that includes a validation of the technology will be given higher priority.
3. Qualitative or mixed methods studies may be an appropriate means of investigating areas such as uptake of telemedicine into usual practice, sustainability, and the organisation of telemedicine within health services. Qualitative work should have an explicit theoretical framework

that relates to the authors' chosen methodology, and be able to demonstrate new conceptual understandings to the reader.

Systematic Reviews

Systematic reviews should generally be no longer than 3,000 words for the body of the work, but longer articles may be taken at the editor's discretion. Lengthy tables and appendices can be placed in the online archive. Subheadings should be used within the article to highlight the content of different sections. The abstract should be a maximum of 250 words and be structured into no more than four subheadings.

Preliminary Communications

These articles report earlier development of telemedicine services and may be of a more descriptive character than original research, but should report novel applications of interest to and generalizable to the broader telemedicine community. The body of the work should generally be no longer than 2,500 words, with subheadings used within the article to highlight the content of different sections. The abstract should be brief and unstructured, with a maximum of 200 words.

Case Reports

Case reports should report novel uses of telemedicine and be prepared in a narrative style comprising a short introduction stating the reasons for reporting the case, the case report, including history, investigations and treatment, and a discussion referring to the relevant literature. Case reports should be a maximum of 2,500 words, and do not require an abstract. If an abstract is provided, it should be brief and unstructured, with a maximum of 200 words.

Education and Practice

Articles in this section are aimed primarily at informing the reader about various aspects of telemedicine, including Overview, Fundamentals, History, Technology, and Praxis. Article content should have the potential to be generalized. In more detail:

Overview

Non-systematic reviews

Fundamentals

Practical reviews of basic or emerging concepts in telemedicine

History

History articles may be considered if new insights can be brought to the reader

Technology

Practical reviews of basic or emerging concepts in telemedicine technology

Praxis

An overview of an area of telemedicine practice

Authors are strongly recommended to ensure that manuscripts in this area add value for the reader, and do not repeat previous work. ***Most articles in this section will be commissioned, and to avoid rejection it may be helpful to consult the Editor*** before sending unsolicited manuscripts.

The length of these articles should be a maximum of 3,000 words. Subheadings should be used within the article to highlight the content of different sections. The abstract should be brief and unstructured, with a maximum of 200 words.

Leaders

Leaders are published ***by invitation only***. They are divided into three categories: Editorials, Focus and Opinion.

Editorial

This is a report of the authors' viewpoint on a specific subject of interest to telemedicine. Editorials generally do not report original data, and may contain narrative commentary on an aspect of the literature. Editorials do not have an abstract.

Focus

A short paper focusing on a topical issue, to a maximum of 2,000 words, with a brief unstructured abstract of no more than 200 words.

Opinion

A short paper putting a potentially controversial opinion, to a maximum of 2,000 words, with a brief unstructured abstract of no more than 200 words. Opinion pieces should be written in the first person.

Tailpieces

Tailpieces consist of Letters, Conference and Society reports, and Book reviews. Note that ***all except Letters are by invitation only.***

Letters are given priority publication. They should be no longer than 1,500 words, with a maximum of 6 references and no abstract. Typically, they would report work in progress.

1.3 Writing your paper

The SAGE Author Gateway has some general advice and on how to get published, plus links to further resources.

1.3.1 Make your article discoverable

When writing up your paper, think about how you can make it discoverable. The title, keywords and abstract are key to ensuring readers find your article through search engines such as Google. For information and guidance on how best to title your article, write your abstract and select your keywords, have a look at this page on the Gateway: How to Help Readers Find Your Article Online.

2. Editorial policies

2.1 Peer review policy

All papers submitted for publication undergo peer review.

2.2 Authorship

Papers should only be submitted for consideration once consent is given by all contributing authors. Those submitting papers should carefully check that all those whose work contributed to the paper are acknowledged as contributing authors.

The list of authors should include all those who can legitimately claim authorship.

This is all those who:

1. Made a substantial contribution to the concept or design of the work; or acquisition, analysis or interpretation of data,
2. Drafted the article or revised it critically for important intellectual content,
3. Approved the version to be published,
4. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.

Authors should meet the conditions of all of the points above. When a large, multicentre group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript. These individuals should fully meet the criteria for authorship.

Acquisition of funding, collection of data, or general supervision of the research group alone does not constitute authorship, although all contributors who do not meet the criteria for authorship should be listed in the Acknowledgments section. Please refer to the International Committee of Medical Journal Editors (ICMJE) authorship guidelines for more information on authorship.

2.3 Acknowledgements

All contributors who do not meet the criteria for authorship should be listed in an Acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, or a department chair who provided only general support.

2.3.1 Third party submissions

Where an individual who is not listed as an author submits a manuscript on behalf of the author(s), a statement must be included in the Acknowledgements section of the manuscript and in the accompanying cover letter. The statements must:

- Disclose this type of editorial assistance – including the individual's name, company and level of input
- Identify any entities that paid for this assistance
- Confirm that the listed authors have authorized the submission of their manuscript via third party and approved any statements or declarations, e.g. conflicting interests, funding, etc.

Where appropriate, SAGE reserves the right to deny consideration to manuscripts submitted by a third party rather than by the authors themselves.

2.3.2 Writing assistance

Individuals who provided writing assistance, e.g. from a specialist communications company, do not qualify as authors and so should be included in the Acknowledgements section. Authors must disclose any writing assistance – including the individual's name, company and level of input – and identify the entity that paid for this assistance”).

It is not necessary to disclose use of language polishing services.

Any acknowledgements should appear first at the end of your article prior to your Declaration of Conflicting Interests (if applicable), any notes and your References.

2.4 Funding

Journal of Telemedicine and Telecare requires all authors to acknowledge their funding in a consistent fashion under a separate heading. Please visit the Funding Acknowledgements page on the SAGE Journal Author Gateway to confirm the format of the acknowledgment text in the event of funding, or state that: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

2.5 Declaration of conflicting interests

It is the policy of *Journal of Telemedicine and Telecare* to require a declaration of conflicting interests from all authors enabling a statement to be carried within the paginated pages of all published articles.

Please ensure that a 'Declaration of Conflicting Interests' statement is included at the end of your manuscript, after any acknowledgements and prior to the references. If no conflict exists, please state that 'The Author(s) declare(s) that there is no conflict of interest'. For guidance on conflict of interest statements, please see the ICMJE recommendations here.

2.6 Research ethics and patient consent

Medical research involving human subjects must be conducted according to the World Medical Association Declaration of Helsinki.

Submitted manuscripts should conform to the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, and all papers reporting animal and/or human studies must state in the methods section that the relevant Ethics Committee or Institutional Review Board provided (or waived) approval. Please ensure that you have provided the full name and institution of the review committee, in addition to the approval number.

For research articles, authors are also required to state in the methods section whether participants provided informed consent and whether the consent was written or verbal.

Information on informed consent to report individual cases or case series should be included in the manuscript text. A statement is required regarding whether written

informed consent for patient information and images to be published was provided by the patient(s) or a legally authorized representative.

Please also refer to the ICMJE Recommendations for the Protection of Research Participants.

2.7 Clinical trials

Journal of Telemedicine and Telecare conforms to the ICMJE requirement that clinical trials are registered in a WHO-approved public trials registry at or before the time of first patient enrolment as a condition of consideration for publication. The trial registry name and URL, and registration number must be included at the end of the abstract.

2.8 Reporting guidelines

The relevant EQUATOR Network reporting guidelines should be followed depending on the type of study. For example, all randomized controlled trials submitted for publication should include a completed CONSORT flow chart as a cited figure and the completed CONSORT checklist should be uploaded with your submission as a supplementary file. Systematic reviews and meta-analyses should include the completed PRISMA flow chart as a cited figure and the completed PRISMA checklist should be uploaded with your submission as a supplementary file. The EQUATOR wizard can help you identify the appropriate guideline.

Other resources can be found at NLM's Research Reporting Guidelines and Initiatives.

3. Publishing Policies

3.1 Publication ethics

SAGE is committed to upholding the integrity of the academic record. We encourage authors to refer to the Committee on Publication Ethics' International Standards for Authors and view the Publication Ethics page on the SAGE Author Gateway.

3.1.1 Plagiarism

Journal of Telemedicine and Telecare and SAGE take issues of copyright infringement, plagiarism or other breaches of best practice in publication very seriously. We seek to protect the rights of our authors and we always investigate claims of plagiarism or misuse of published articles. Equally, we seek to protect the reputation of the journal against malpractice. Submitted articles may be checked with duplication-checking software. Where an article, for example, is found to have plagiarised other work or included third-party copyright material without permission or

with insufficient acknowledgement, or where the authorship of the article is contested, we reserve the right to take action including, but not limited to: publishing an erratum or corrigendum (correction); retracting the article; taking up the matter with the head of department or dean of the author's institution and/or relevant academic bodies or societies; or taking appropriate legal action.

3.1.2 Prior publication

If material has been previously published it is not generally acceptable for publication in a SAGE journal. However, there are certain circumstances where previously published material can be considered for publication. Please refer to the guidance on the SAGE Author Gateway or if in doubt, contact the Editor at the address given below.

3.2 Contributor's publishing agreement

Before publication, SAGE requires the author as the rights holder to sign a Journal Contributor's Publishing Agreement. SAGE's Journal Contributor's Publishing Agreement is an exclusive licence agreement which means that the author retains copyright in the work but grants SAGE the sole and exclusive right and licence to publish for the full legal term of copyright. Exceptions may exist where an assignment of copyright is required or preferred by a proprietor other than SAGE. In this case copyright in the work will be assigned from the author to the society. For more information please visit the SAGE Author Gateway.

3.3 Open access and author archiving

Journal of Telemedicine and Telecare offers optional open access publishing via the SAGE Choice programme. For more information please visit the SAGE Choice website. For information on funding body compliance, and depositing your article in repositories, please visit SAGE Publishing Policies on our Journal Author Gateway.

4. Preparing your manuscript for submission

4.1 Manuscript structure

Each manuscript should contain:

Covering letter

The covering letter is important. To help the Editors in their preliminary evaluation, please indicate why you think the paper suitable for publication. If your article should be considered for fast-track publication, please explain why.

Title page

The first page should contain the full title of the manuscript, the author(s) name(s) and affiliation(s), and the name, postal and email addresses of the author for correspondence, as well as a full list of declarations. Up to eight co-authors may be entered on SAGE Track; please ensure all additional co-authors are included on the title page.

Please do not submit the Tables and Figures as separate files. The manuscript should be uploaded as single file, laid out in the following order: (1) main text, including title page, abstract and references; (2) tables; (3) figures; and (4) supplementary files.

4.2 Formatting

The preferred format for your manuscript is Word. LaTeX files are also accepted. Word and (La)Tex templates are available on the Manuscript Submission Guidelines page of our Author Gateway.

4.3 Artwork, figures and other graphics

For guidance on the preparation of illustrations, pictures and graphs in electronic format, please visit SAGE's Manuscript Submission Guidelines.

Figures supplied in colour will appear in colour online regardless of whether or not these illustrations are reproduced in colour in the printed version. For specifically requested colour reproduction in print, you will receive information regarding the costs from SAGE after receipt of your accepted article.

4.4 Supplementary material

This journal is able to host additional materials online (e.g. datasets, podcasts, videos, images etc) alongside the full-text of the article. For more information please refer to our guidelines on submitting supplementary files.

4.5 Reference style

Journal of Telemedicine and Telecare adheres to the SAGE Vancouver reference style. View the SAGE Vancouver guidelines to ensure your manuscript conforms to this reference style.

If you use EndNote to manage references, you can download the SAGE Vancouver EndNote output file.

4.6 English language editing services

Authors seeking assistance with English language editing, translation, or figure and manuscript formatting to fit the journal's specifications should consider using SAGE

Language Services. Visit SAGE Language Services on our Journal Author Gateway for further information.

5. Submitting your manuscript

Journal of Telemedicine and Telecare is hosted on SAGE Track, a web based online submission and peer review system powered by ScholarOne™ Manuscripts. Visit <http://mc.manuscriptcentral.com/jtt> to login and submit your article online.

IMPORTANT: Please check whether you already have an account in the system before trying to create a new one. If you have reviewed or authored for the journal in the past year it is likely that you will have had an account created. For further guidance on submitting your manuscript online please visit ScholarOne Online Help.

5.1 ORCID

As part of our commitment to ensuring an ethical, transparent and fair peer review process SAGE is a supporting member of ORCID, the Open Researcher and Contributor ID. ORCID provides a unique and persistent digital identifier that distinguishes researchers from every other researcher, even those who share the same name, and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between researchers and their professional activities, ensuring that their work is recognized.

The collection of ORCID iDs from corresponding authors is now part of the submission process of this journal. If you already have an ORCID iD you will be asked to associate that to your submission during the online submission process. We also strongly encourage all co-authors to link their ORCID ID to their accounts in our online peer review platforms. It takes seconds to do: click the link when prompted, sign into your ORCID account and our systems are automatically updated. Your ORCID iD will become part of your accepted publication's metadata, making your work attributable to you and only you. Your ORCID iD is published with your article so that fellow researchers reading your work can link to your ORCID profile and from there link to your other publications.

If you do not already have an ORCID iD please follow this link to create one or visit our ORCID homepage to learn more.

5.2 Information required for completing your submission

You will be asked to provide contact details and academic affiliations for all co-authors via the submission system and identify who is to be the corresponding author. These details must match what appears on your manuscript. At this stage

please ensure you have included all the required statements and declarations and uploaded any additional supplementary files (including reporting guidelines where relevant).

5.3 Permissions

Please also ensure that you have obtained any necessary permission from copyright holders for reproducing any illustrations, tables, figures or lengthy quotations previously published elsewhere. For further information including guidance on fair dealing for criticism and review, please see the Copyright and Permissions page on the SAGE Author Gateway.

6. On acceptance and publication

6.1 SAGE Production

Your SAGE Production Editor will keep you informed as to your article's progress throughout the production process. Proofs will be sent by PDF to the corresponding author and should be returned promptly. Authors are reminded to check their proofs carefully to confirm that all author information, including names, affiliations, sequence and contact details are correct, and that Funding and Conflict of Interest statements, if any, are accurate. Please note that if there are any changes to the author list at this stage all authors will be required to complete and sign a form authorising the change.

6.2 Online First publication

Online First allows final articles (completed and approved articles awaiting assignment to a future issue) to be published online prior to their inclusion in a journal issue, which significantly reduces the lead time between submission and publication. Visit the SAGE Journals help page for more details, including how to cite Online First articles.

6.3 Access to your published article

SAGE provides authors with online access to their final article.

6.4 Promoting your article

Publication is not the end of the process! You can help disseminate your paper and ensure it is as widely read and cited as possible. The SAGE Author Gateway has numerous resources to help you promote your work. Visit the Promote Your Article page on the Gateway for tips and advice.

7. Further information

Any correspondence, queries or additional requests for information on the manuscript submission process should be sent to the *Journal of Telemedicine and Telecare* editorial office as follows:

jtteditorial@sagepub.co.uk

ANEXO E – Comprovante de submissão do Artigo 2

24/06/2022 15:48

Email – Lígia Cristelli da Paixão – Outlook

----- Forwarded message -----

De: Journal of Telemedicine and Telecare <onbehalf@manuscriptcentral.com>

Date: sex., 24 de jun. de 2022 às 14:33

Subject: Journal of Telemedicine and Telecare JTT-22-06-069

To: <ljgiapaixao@hotmail.com>, <maurohenriqueabreu@gmail.com>, <sobrinho.bhz@gmail.com>, <rcmartins05@gmail.com>

24-Jun-2022

Dear Professor Martins:

Your manuscript entitled "Brazilian dental teleconsulting: satisfaction and associated factors" has been successfully submitted online and is presently being given full consideration for publication in Journal of Telemedicine and Telecare.

Your manuscript ID is JTT-22-06-069.

You have listed the following individuals as authors of this manuscript:

Paixão, Lígia; Abreu, Mauro Henrique; Ribeiro-Sobrinho, Antônio; Martins, Renata

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc.manuscriptcentral.com/jtt> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Center after logging in to <https://mc.manuscriptcentral.com/jtt>.

As part of our commitment to ensuring an ethical, transparent and fair peer review process SAGE is a supporting member of ORCID, the Open Researcher and Contributor ID (<https://orcid.org/>). We encourage all authors and co-authors to use ORCID iDs during the peer review process. If you have not already logged in to your account on this journal's ScholarOne Manuscripts submission site in order to update your account information and provide your ORCID identifier, we recommend that you do so at this time by logging in and editing your account information. In the event that your manuscript is accepted, only ORCID iDs validated within your account prior to acceptance will be considered for publication alongside your name in the published paper as we cannot add ORCID iDs during the Production steps. If you do not already have an ORCID iD you may login to your ScholarOne account to create your unique identifier and automatically add it to your profile.

Thank you for submitting your manuscript to Journal of Telemedicine and Telecare.

Sincerely,
Megha Bisht
Journal of Telemedicine and Telecare
jtt@sagepub.com

APÊNDICE – Atividades realizadas durante o período do doutorado

Aluna: Lígia Cristelli da Paixão

Número de registro: 2018711045

Data para conclusão: 31/07/2022

Atividades cursadas (Créditos: 35)

Período	Nome Atividade	Frequência	Nota	Conceito	Créditos
2018/2	ESTAGIO DOCENTE I	S	100	A	03
2018/2	PESQUISA EM ENDODONTIA I	S	100	A	06
2018/2	METODOLOGIA DA PESQ. EM ODONTOLOGIA II	S	93	A	02
2019/1	ESTAGIO DOCENTE II	S	90	A	03
2019/1	SEMINARIOS DE PESQ. EM ODONTOLOGIA III	S	94	A	03
2019/1	BIOESTAT. APL. À PESQ. ODONTOLÓGICA II	S	95	A	04
2019/1	PESQUISA EM ENDODONTIA II	S	92	A	06
2019/1	EPIDEMIOLOGIA II	S	95	A	03
2019/2	SEMINARIOS DE PESQ. EM ODONTOLOGIA IV	S	100	A	03
2020/1, 2020/2, 2021/1, 2021/2 e 2022/1	ELABORACAO DE TRABALHO FINAL				0

Publicação de artigo científico:

Paixão, LC; Costa, VA; Ferreira EF; Ribeiro Sobrinho AP; Martins RC. Analysis of the asynchronous dental teleconsulting of Telehealth Brazil Networks in Minas Gerais state. *Brazilian Oral Research*, 2018.

Costa, VA, Paixão, LC, Ferreira EF, Ribeiro Sobrinho AP, Martins RC. Analysis of Dental Teleconsulting in the Pediatric Dentistry Field of Telehealth Minas Gerais: A Cross-Sectional Study. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*, 2021.

Artigo científico aceito para publicação:

Paixão, LC, Costa, VA, Ferreira EF, Ribeiro Sobrinho AP, Martins RC. Endodontic teleconsulting by Telehealth in Minas Gerais state, Brazil. *Cadernos Saúde Coletiva*.

Paixão, LC, Ferreira EF, Ribeiro Sobrinho AP, Martins RC. National Analysis of dental teleconsulting of the Brazilian Telehealth Program. *Brazilian Oral Research*.

Artigo científico submetido:

Paixão, LC, Costa, VA, Godoy GP, Ferreira EF, Ribeiro Sobrinho AP, Martins RC. Oral Medicine and Pharmacology Teleconsulting Sessions of the Telehealth Program in a Southeastern State of Brazil. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*.

Paixão, LC, Abreu MHNG, Ribeiro Sobrinho AP, Martins RC. Satisfaction and associated factors in Brazilian dental teleconsulting. *Telemedicine and Telecare*.

Aranha, RLB; Paixão, LC, Martins, RC, Abreu, MHNG. Factors associated with avoiding referrals of orofacial pain cases to secondary dental care by telehealth in Brazil: a cross-sectional study on orofacial pain in 2019 and 2020. *Community Dentistry and Oral Epidemiology*.

Publicação de resumo em anais de eventos científicos:

35ª Reunião SBPqO - Paixão, LC; Costa, VA; Ferreira EF; Ribeiro Sobrinho AP; Martins RC. Análise das especialidades odontológicas nas Teleconsultorias de Minas Gerais. In: 35ª Reunião Anual da SBPqO, 2018, Campinas. *Brazilian Oral Research*, 2018. v. 32. p. 266-266.

35ª Reunião SBPqO - Costa, VA; Paixão, LC; Ferreira EF; Ribeiro Sobrinho AP; Martins RC. O perfil das Teleconsultorias Odontológicas realizadas nos núcleos de Minas Gerais. In: 35ª Reunião Anual da SBPqO, 2018, Campinas. *Brazilian Oral Research*, 2018. v. 32. p. 112-112.

XIV Encontro Científico da Faculdade de Odontologia da Universidade Federal de Minas Gerais - ANÁLISE DAS DÚVIDAS EM ENDODONTIA NAS TELECONSULTORIAS DE MINAS GERAIS Lígia Cristelli da PAIXÃO*, Vanessa

Andrade COSTA, Efigênia Ferreira e FERREIRA, Antônio Paulino RIBEIRO SOBRINHO, Renata de Castro MARTINS. 2018.

9º Congresso Brasileiro de Telemedicina e Telessaúde: apresentação de trabalho e publicação de resumo em anais de Congresso - Paixão LC*, Costa VA, Ferreira EF, Ribeiro Sobrinho AP, Martins RC. ANÁLISE DAS DÚVIDAS CIRÚRGICAS DAS TELECONSULTORIAS ODONTOLÓGICAS ASSÍNCRONAS DE MINAS GERAIS. In: Anais do 9º Congresso Brasileiro de Telemedicina e Telessaúde - CBTms. São Paulo (SP) Transamerica Expo Center, 2019. Disponível em: Acesso em: 02/07/2019 ISBN: 978-85-5722-215-1

36ª Reunião Anual da SBPqO - Paixão, LC; Costa, VA; Ferreira EF; Ribeiro Sobrinho AP; Martins RC. Teleconsultorias odontológicas assíncronas de Minas Gerais: dúvidas na área de Estomatologia. In: 36ª Reunião Anual da SBPqO, 2019, Campinas. Brazilian Oral Research, 2019. v. 33. p. 281-281

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Orientação de Trabalho de Conclusão de curso no Centro Universitário de Belo Horizonte (UniBH):

Cordeiro DCM, Araujo LO, Madureira NDM, Soares RA, Paixão LC. O uso da endodontia guiada como alternativa para tratamento de canais calcificados: revisão literária. E-scentia. Revista Científica de Saúde do Centro Universitário de Belo Horizonte.

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Participação em banca de defesa de Monografia de Especialização e Trabalho de Conclusão de curso:

ALMEIDA, G. C.; PAIXÃO, L. C.; GUIMARAES, L. C. Participação em banca de Thalita Rafaela de Carvalho. Endodontia Minimamente Invasiva. 2020. Monografia (Aperfeiçoamento/Especialização em Especialização em Endodontia) - Faculdade de Tecnologia do Ipê.

ALMEIDA, G. C.; PAIXÃO, L. C.; GUIMARAES, L. C. Participação em banca de Gabriela Cruz Bartoli. Endodontia Minimamente Invasiva. 2020. Monografia (Aperfeiçoamento/Especialização em Especialização em Endodontia) - Faculdade de Tecnologia do Ipê.

COSTA, VA, PAIXÃO, LC, MARTINS RC. Participação em banca de Vanessa Andrade Costa. Análise das Teleconsultorias Odontológicas na área de Odontopediatria do Telessaúde Minas Gerais. 2020. Trabalho de Conclusão de Curso (TCC). Faculdade de Odontologia da UFMG.

Participação em banca de avaliação de trabalhos:

Participação como avaliadora de trabalhos científicos no I Encontro Científico de Odontologia da Faculdade Arnaldo - 2019

Participação em eventos científicos:

Congresso Canal Mundial – Participação como ouvinte em 2018.

35ª Reunião SBPqO – Participação com apresentação de resumo e ouvinte em 2018.

XIV Encontro Científico da Faculdade de Odontologia da Universidade Federal de Minas Gerais - Participação com apresentação de resumo e ouvinte em 2018.

Congresso Canal Mundial – Participação como ouvinte em 2019.

9º Congresso Brasileiro de Telemedicina e Telessaúde - Participação com apresentação de resumo e ouvinte em 2019.

36ª Reunião Anual da SBPqO - Participação com apresentação de resumo e ouvinte em 2019.

38ª Reunião Anual da SBPqO - Participação com apresentação de resumo e ouvinte em 2021

XV Encontro Científico da Faculdade de Odontologia da Universidade Federal de Minas Gerais - Participação com apresentação de resumo e ouvinte em 2021.

Experiência docente:

Professora nas clínicas de Aperfeiçoamento e Especialização em Endodontia do IES – outubro de 2018 até o presente momento.

Preceptora na Clínica Integrada do curso de Odontologia do UniBH – de setembro de 2019 até dezembro de 2021.

Professora orientadora na Liga Acadêmica de Endodontia do curso de Odontologia do UniBH – fevereiro de 2020 até dezembro de 2021.

Professora na disciplina de Pré-Clínico de Endodontia II do curso de Odontologia do UniBH – 2º semestre de 2020 e 1º de 2021.

Professora na Unidade Curricular de Endodontia do curso de Odontologia do UniBH – 1º e 2º semestre de 2021.

Professora na Unidade Curricular de Radiologia e Imaginologia do curso de Odontologia do UniBH – 2º semestre de 2021.