

**THE IMPACT OF COVID-19 ON THE ECONOMIC SUSTAINABILITY OF THE DENTAL CLINICS THAT ARE PART OF THE SERRA, HORTÊNCIAS, AND COASTAL COREDES OF RS**

***O IMPACTO DA COVID-19 NA SUSTENTABILIDADE ECONÔMICA DAS CLÍNICAS ODONTOLÓGICAS QUE FAZEM PARTE DOS COREDES, SERRA, HORTÊNCIAS E LITORAL DO RS***

***EL IMPACTO DEL COVID-19 EN LA SOSTENIBILIDAD ECONÓMICA DE LAS CLÍNICAS DENTALES QUE FORMAN PARTE DE LAS COREDES SERRA, HORTÊNCIAS Y LITORAL DE RS***

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**ABSTRACT:** The objective of this article was to investigate the impact of the COVID-19 pandemic in the year 2020 on dental clinics located in the municipalities that are part of the Regional Development Councils - COREDEs, Serra, Hortências and the Coast of Rio Grande do Sul -RS. In this horizon, a descriptive exploratory research was carried out, which had as an instrument for data collection a questionnaire applied to the partners-owners of dental clinics. The results indicated that 61.1% of the dental clinics had a reduction in attendance, 38.9% did not. 68.3% had a reduction in revenue, 19% did not, and 12.7% remained economically stable. 72.8% of the participating clinics had an increase in expenses with personal protective equipment. 52.4% of the respondents have financial planning or a financial reserve for crisis periods, while 47.6% do not have this resource. Given the above, it can be inferred that the pandemic of COVID-19 triggered impacts other than just epidemiological impacts on a global scale, directly impacting the economic sustainability of dental clinics during the year 2020.

**KEYWORDS:** COVID-19. Sustainability. Healthcare organizations. Pandemic impact.

**RESUMO:** Este artigo objetiva investigar o impacto da pandemia de COVID-19 no ano de 2020 nas clínicas odontológicas localizadas nos municípios que fazem parte dos Conselhos Regionais de Desenvolvimento – COREDEs, Serra, Hortências e Litoral do Rio Grande do Sul – RS. Neste horizonte, realizou-se uma pesquisa exploratória descritiva, que teve como instrumento para coleta de dados um questionário aplicado aos sócios-proprietários de clínicas odontológicas. Os resultados indicaram que, 61,1% das clínicas odontológicas

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tiveram redução no atendimento e 38,9% não tiveram. 68,3% das clínicas tiveram redução de receita, 19% não, e 12,7% mantiveram-se economicamente estáveis. 72,8% das clínicas participantes tiveram aumento de despesas com equipamento de proteção individual. 52,4% dos respondentes têm planejamento financeiro ou uma reserva financeira para períodos de crise, enquanto 47,6% não possui esse recurso. Considera-se que a pandemia de COVID-19 desencadeou impactos outros que não apenas de ordem epidemiológica em escala global, repercutindo diretamente na sustentabilidade econômica das clínicas odontológicas durante o ano de 2020.

**PALAVRAS-CHAVE:** COVID-19. Sustentabilidade. Entidades de saúde. Impacto da pandemia.

**RESUMEN:** Este artículo tuvo como objetivo investigar el impacto de la pandemia de COVID-19 en el año 2020 en las clínicas dentales ubicadas en los municipios que forman parte de los Consejos Regionales de Desarrollo - COREDEs, Serra, Hortênsias y Litoral de Rio Grande do Sul -RS. En este horizonte, se realizó una investigación exploratoria descriptiva, que tuvo como instrumento de recolección de datos un cuestionario aplicado a los socios-propietarios de clínicas dentales. Los resultados indicaron que el 61,1% de las clínicas dentales tuvieron una reducción de la asistencia y el 38,9% no. El 68,3% tuvo una reducción de ingresos, el 19% no el 12,7% se mantuvo económicamente estable. El 72,8% de las clínicas participantes tuvieron un aumento de los gastos con equipos de protección personal. El 52,4% de los encuestados dispone de una planificación financiera o de una reserva financiera para periodos de crisis, mientras que el 47,6% no dispone de este recurso. Por todo lo anterior, se entiende que la pandemia de COVID-19 desencadenó impactos no sólo de orden epidemiológico a escala mundial, impactando directamente en la sostenibilidad económica de las clínicas dentales durante el año 2020.

**PALABRAS CLAVE:** COVID-19. Sostenibilidad. Entidades sanitarias. Impacto de la pandemia.

## Introduction

This article aims to investigate the impact of the pandemic of COVID-19 in the year 2020 in dental clinics located in municipalities that are part of the Regional Development Councils - COREDEs<sup>4</sup>, Serra, Hortênsias and the Coast of Rio Grande do Sul - RS. Since dental clinics serve the public directly, it is understood that, in the face of an economic crisis, they may have adopted sustainable strategies in order to stay in the market. When dealing with an economic crisis, it is understood that dental clinic patients may also have deprived themselves of attention to oral care, due to the fear of contagion from Coronavirus. This inference directly affects the economic situation of dental clinics, which may have had repercussions on the ways of conducting clinic management. In order to further the theme

<sup>4</sup> Conselhos Regionais de Desenvolvimento – COREDEs.

presented here, this research relies on the literature on pandemic (ATHER *et al.*, 2020; DE OLIVEIRA; CORRÊA, 2020; MENG *et al.*, 2020; POTT; POTT-JUNIOR, 2021; SENHORAS, 2020), economic sustainability (FERRAZ, 2020; SCHWENDICKE *et al.*, 2020), and economic management (BRASIL, 2020; DA SILVA *et al.*, 2020; DE OLIVEIRA *et al.*, 2020; GULLO, 2020).

Facing a pandemic context, which started in March 2020 and extends to the current period (May 2021), dental clinics needed to find ways to seek or balance economic sustainability strategies in order to continue providing the services they already offered before the pandemic. According to Gullo (2020), latent concerns arise regarding how to practice economic management with a current financial scenario, so as not to interrupt their activities.

This is a quantitative research, which collected 220 questionnaires in the municipalities that are part of the Regional Development Councils (COREDEs)<sup>5</sup> - Serra, Hortências and Litoral of Rio Grande do Sul - RS. The investigative scope of this research derives from a doctoral research in the area of Health, focused on Dentistry, approved by the Research Ethics Committee (CEP) of the University where the research is inserted (blind review), with opinion number CAAE: 39814720.9.0000.5341. Based on the research data, we analyzed, from the standpoint of economic impact, which were the eventual or continuous activities of the clinics that were affected by the pandemic. Through data collection, for the purpose of systematizing the analysis proposed here, information was extracted that investigated whether there was an increase or reduction in spending on material and human resources, as well as the use of financial reserves to maintain the clinic in 2020. In addition, the development of possible institutional strategies regarding the offer of *online appointments*, schedules, and orientations was also investigated. Therefore, this research aims to contribute empirically to the health area, not only with regard to the consequences of COVID-19 for dentistry, but also with a view to offering theoretical and methodological constructs so that one can think about the economic management of dental clinics in general.

This paper consists of Introduction; which presents the context in which this research takes place, objective and methodological path; second section that deals with Covid-19 and Dental Clinics in the pandemic; data analysis; and final considerations. In the next section, a brief history of COVID-19 will be presented.

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<sup>5</sup> Municipalities integrating the COREDEs that took part in this research: Caxias do Sul, Farroupilha, Bento Gonçalves, Veranópolis, Nova Prata, Carlos Barbosa (COREDE, Serra) Gramado, Canela, Nova Petrópolis (COREDE, Hortências), Torres, Capão da Canoa e Arroio do Sal (COREDE, Coast).

## COVID-19 and dental clinics

Since COVID-19 was announced to the world on January 30, 2020, by the World Health Organization - WHO (2019), it caused the scientific community to turn once again to the field of global health. In this way, the SARS-CoV2 (Covid-19) pandemic also reached Brazil, generating chaos in the year 2020, causing a social, economic, and psychological impact (BEZERRA *et al.*, 2020; DE OLIVEIRA; CORRÊA, 2020; GULLO, 2020; ORNELL *et al.*, 2020; NETO, 2020). Coronavirus has become the fifth documented pandemic since the Spanish flu pandemic of 1918 (MENG; HUA; BIAN, 2020), having first been recorded in Wuhan, China and subsequently spread around the world (LIU; KUO; SHIH, 2020). The COVID-19 pandemic led to a chaotic situation, forcing society as a whole to change its daily practices. In this scenario, the various sectors of society were affected, either economically or in terms of quality of life. People had to re-signify their consumption practices (BEZERRA *et al.*, 2020; MENG; HUA; BIAN, 2020; SENHORAS, 2020).

The economic sustenance of the financial system, the mental health of people in times of confinement, and the fear for the risk of illness and death, access to essential goods such as food, medicine, transportation, among others, have also impacted people's lives (FIOCRUZ, 2020; GHANI, 2020). Scientific research in the field of medicine exploring the specifics about COVID-19 is in full swing worldwide (CARRER *et al.*, 2020; DA SILVA *et al.*, 2020; MENG *et al.*, 2020). Day in and day out, scientists have been engaged in developing and testing vaccines and drugs to alleviate the high rates of COVID-19 contagion (DA SILVA *et al.*, 2020; FERGUSON *et al.*, 2020; FIOCRUZ, 2020). In addition, the need for actions to contain social mobility such as isolation and quarantine, as well as the speed and urgency of testing drugs and vaccines highlight ethical and human rights implications that deserve critical analysis and caution (FIOCRUZ, 2020; PAHO, 2020;).

The World Health Organization - WHO (2020), regarding the transmissibility of the new virus, suggests as a strategy in most countries, the continuity of social distancing and frequent hand washing. In this sense, the first reaction of countries facing the outbreak of COVID-19 was to close educational institutions, suspend social gatherings, sports activities, events, airports, and even banks in an attempt to control the spread of the virus. In addition, several individuals entered into self-quarantine to do their part in society, so as to possibly mitigate the spread of the virus, especially when associated with comorbidities (WHO, 2020).

However, healthcare entities are extremely relevant to society and cannot stop serving the community, they can hardly close during a pandemic, except when there is an outbreak

within these healthcare entities (ARTESE, 2020; SCHWENDICKE; KROIS; GOMEZ, 2020). Among healthcare professionals are dental surgeons. Although these professionals have a high standard of knowledge and practice in personal protective equipment (PPE) use, dental surgeons, like other healthcare professionals, find themselves in a state of anxiety and fear (ATHER *et al.*, 2020; MENG; HUA; BIAN, 2020). Several dental clinics have modified their services according to the recommended guidelines. These have turned to emergency treatment only, leading to the suspension of elective appointments in the offices for an uncertain period of time (GHANI, 2020; MENG; HUA; BIAN, 2020).

Dental surgeons, as well as the entire population, are every day more apprehensive in face of the new reality, since the spread of COVID-19 has been increasing (FERGUSON *et al.*, 2020). Given this scenario, besides the fear of contracting and transmitting COVID-19, there is the uncertainty about the country's economic future (ARTESE, 2020; SILVA *et al.* 2020). Countries like Brazil, which was emerging from an economic crisis in 2020, will have to shoulder a significant recession (BRASIL, 2020). According to Schwendicke, Krois and Gomez (2020) when they conducted a survey in Germany consisting of random sampling of 300 dentists, they concluded that COVID-19 already had a negative economic impact on dental practices in 2020 (SCHWENDICKE; KROIS; GOMEZ, 2020). In turn, in Italy, dental activity was recognized as a service of first necessity by Ministerial Decree No. 19 of March 22, 2020 (ITALY, 2020) determined that during the COVID-19 pandemic, dental practice would be limited to urgent and emergency treatments, while elective treatments would be postponed.

## Methodology

This is a descriptive exploratory study carried out through a *survey* questionnaire (MALHOTRA, 2006), as a quantitative research, composed of sample data collected through a structured questionnaire. This instrument aims to analyze a sample of the population and is intended to obtain specific information from the interviewees (MALHOTRA, 2006).

The approach to the clinics and offices during the pandemic period is part of a doctoral research in the area of Health, related to Dentistry and approved by the Research Ethics Committee (CEP) of the University where this research is registered (blind review), with opinion number **CAAE**: 39814720.9.0000.5341. As for data collection regarding the practices of dental clinics, this was done by means of a semi-structured questionnaire, composed of 27 questions, 16 open questions and 11 closed questions, divided into 03 axes: axis 01 -

identification of the clinic; axis 02 - clinic operation; and axis 03 - economic management. Based on the axes mentioned above, the economic impacts on dental clinics were investigated. In view of the above, the research had the participation of 126 partners-owners of dental clinics, who answered the survey instrument. No identification was required from the respondents, and participation was voluntary. The application of the questionnaire took place from January 6th to May 31st, 2021, when the questionnaires were delivered and collected in person.

The sample size calculation was done using the *Statulator*<sup>6</sup> software. As for the factor of interest, having 220 respondents as the population size, the study required a minimum sample size of 140 respondents. In other words, it was inferred that, from 140 respondents, 50% of them had a factor of interest, which represented a 95% confidence factor. However, only 126 questionnaires were counted, as 14 questionnaires were returned blank.

For data analysis the *Microsoft Excel* spreadsheet package was used, for the purpose of analysis and tabulation of the collected data. In addition, the lapidated data were organized into graphs. The data analysis had the theoretical-methodological contribution in the area of economic sustainability (DE OLIVEIRA *et al.*, 2020; GULLO, 2020; MILLER, 2019; NETO, 2020), economic management (FERRAZ, 2020; SCHWENDICKE; KROIS; GOMEZ, 2020) pandemic and dentistry (HADDAD *et al.*, 2014). Based on the theoretical reference cited, aspects such as: (a) was there an increase or reduction in spending on material and human resources? (b) was there a need to reduce the workload, was there a reduction in revenue during the pandemic period in 2020? (c) does the clinic have financial planning?; (d) does the clinic have or make financial reserves for periods of crisis? Was there, therefore, development of possible institutional strategies for offering *online* services, appointments, and orientation?

## Data analysis

Given the data analyzed, from the 03 axes proposed in this research, the first aspect highlighted, when performed the analysis of axis 2 of this study was the need for reduction in the workload of employees and the workload of care. Of the 126 respondents, 61.1% answered that they had a reduction in their workload and 38.9% answered that there was no reduction in their workload.

According to research conducted in the area of Dentistry (GHANI, 2020; LUCENA *et al.*, 2020) in other regions, this reduction in attendance at dental clinics occurs because there

<sup>6</sup> Available: <http://statulator.com/SampleSize/ssIP.html>. Access: 10 Dec. 2020.

was/is a strong recommendation that the population respect the guidelines about social isolation. In this horizon, some individuals are concerned about leaving home to seek health services, which also reverberated on the services offered by dental clinics, so that this resulted in a reduction in the number of visits and, consequently, caused a search for care only in extreme cases.

Added to this, there is still the lack of clarity of the population, as to the understanding of what, in fact, would be a situation of urgency or dental emergency. In these cases, the pain factor seemed to be the determining factor for the patient to seek dental care (GHANI, 2020; LUCENA *et al.*, 2020). According to Medeiros (2020), a survey conducted in China showed a 38% decrease in the number of patients seen in dental emergency services during the pandemic period.

The second aspect revealed by data analysis, refers to the reduction in revenue during the pandemic. Regarding the reduction in revenue, 68.3% of the respondents mentioned that there was a reduction; 19% that there was no reduction, and 12.7% answered that they remained economically stable, as in the periods before the pandemic. It is worth noting, based on the statements of Carrer *et al.* (2020) and Gomes *et al.* (2021), that the predominance of reduced revenue occurred not only in the regions of Serra, Hortências and Litoral of RS. This is because the same fact has been occurring globally. Still, according to Carrer *et al.* (2020), the public health crisis resulting from COVID-19, has globally presented negative impacts on the dental activity.

According to Lucena *et al.* (2020), the attendance of cases of inflammation and toothache in Brazil fell about 30%, when compared to the same period in 2019. Regarding the cases of first dental consultation, there was a reduction of about 40%, since patients are avoiding leaving their homes. This reduction was based on data collected through the page of the Unified Health System for Primary Care (e-SUSAB), on the portal of the Ministry of Health, which identifies the low rate of dental consultations during the pandemic of COVID-19 (BRASIL, 2020).

Due to the characteristics of dental settings, the risk of cross-infection can be high between patients and dentists. For dental offices and hospitals in areas that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed. In this regard, the third aspect identified relates to clinic expenses concerning the materials that were consumed the most by dental clinics in the 2020 pandemic period. The survey showed that dental clinics had an increase of 72.8% in the consumption of materials related to Personal Protective Equipment - PPE during the pandemic period. (PPE) is considered any

means or device intended to be used by a person against possible risks threatening their health or safety during the exercise of a particular activity (MILFONT; OLIVEIRA, 2015). As the epidemic accelerates in Brazil, access to personal protective equipment (PPE) such as masks, gloves... for healthcare professionals is a constant concern.

This, because according to Meng, Hua and Bian (2020), infection control measures are necessary to prevent the coronavirus from spreading further and to help control the epidemic situation, in this case, pandemic. Given this, there is a consensus regarding the guidelines on the provision of dental services during the pandemic of COVID-19, in which it is recommended that dentists reinforce safety measures through personal protective equipment (PPE) and avoid, when possible, performing procedures that involve the production of aerosols and droplets (OLIVEIRA *et al.*, 2020), in order to prevent controlling the spread of the virus.

The fourth aspect refers to the dependence of the clinics on outsourced services, the greatest dependence is on dental prosthesis laboratories with 70.2%, followed by the collection of contaminated waste with 16.9%, and 12.9% of the participants answered that they do not depend on third-party services. The survey highlights the relevance and dependence on thirdparty services for the operation of a dental clinic. The collection of contaminated waste stands out here, given the dimension and intensification promoted by COVID-19, which demanded a readjustment in the actions of these service providers. With the pandemic, this service has become indispensable. It is understood that it is necessary that these professionals make the correct waste disposal, thus contributing to a smaller spread of the virus through infected material. The fifth aspect refers to the financial planning and financial reserves of dental clinics. The survey found that 52.4% of respondents have financial planning or a financial reserve for crisis periods; 47.6% of the participants do not have this resource. Although the clinics have financial planning and reserves, these are not thought of for the long term, according to the data analyzed. That is, financial reserves vary from 1 to 12 months for this percentage, while 45% of the respondents could not answer how long they could maintain themselves with the financial reserves.

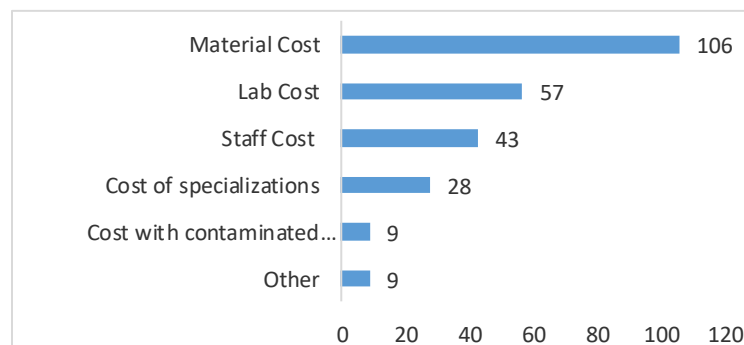
According to Dornela *et al.* (2014) have a healthy financial planning is: save part of your income, to form a good asset; start saving as soon as possible, to reach old age without depending on anyone; always think about the future, taking into account the medium and long term; have a purpose, make the planning of applications thinking about these ideals. It is essential that in the current economic scenario the liberal professionals, and especially the



odontologists, should be prepared with strategies and tools that assist in the management, especially the financial one (GOMES; MORAES, 2013).

The sixth aspect refers to "where" the greatest cost of dental clinics is concentrated. According to graph 1 (one), the highest cost is concentrated in the acquisition of materials. According to Medeiros (2020) this occurs because most of the materials used in dental clinics are imported from China, which leads to a dependence on the foreign market.

**Chart 1 – Costs**



Source: Prepared by the authors

The seventh aspect refers to *online* service in dental clinics. The survey indicated that 86.5% of respondents do not see feasibility for *online care* and did not use this tool during the pandemic period of 2020; 13.5% answered yes that there is the possibility of providing guidance, referrals and evaluations through *online care*, and made use of this tool in the year 2020. However Carrer *et al.* (2020) stated that this tool has been shown to be both cost effective and spread access, with advantages related to increased service effectiveness; completeness; and universal access, with significant gains in image quality and accuracy, to reduced waiting time and treatment costs. The use of Digital Information and Communication Technologies (DTIC) provides insight into today's society, shows global interconnectedness, and promotes continuous and permanent access to any and all information (HADDAD *et al.*, 2014; PACHECO *et al.*, 2018). According to Gullo (2020), the world is heading towards an *online* service, understanding how your business can benefit from this new moment is a matter of survival and applies to all segments of the economy.

## Final considerations

The data analyzed showed that there was a reduction in the workload of the staff, the service, and consequently in revenue. This reduction is a reflection of the precautionary measures that were announced during the pandemic period in order to reduce the transmission of COVID-19 in 2020.

Another piece of data analyzed is related to PPE. As the pandemic accelerates in Brazil, access to Personal Protective Equipment (PPE) for health professionals is a constant concern. Punctually at the beginning and during this pandemic period, what we see is the rise in prices of PPE, especially masks and disposable aprons. This equipment has had significant increases associated with the lack of supply in the input market.

In pandemic periods, it is not enough just to manage the clinic, to have control and organization of consumption and purchases of supplies, it is necessary to follow the economic market in Brazil and in the world, with redoubled attention to ensure the supply of supplies, drugs, equipment, and skilled labor.

Currently, there is a large supply of dental services, which leads professional dentists to offer a differentiated service to obtain a competitive advantage. Such differentiation does not depend only on the technical aspects related to good dentistry practice, but also on the management of a dental office, that is, good strategic planning, financial analysis, and personnel management contribute to good financial performance. The impacts of the pandemic of COVID-19 caused asymmetric negative economic impacts, of trans-scale and intertemporal nature, generating effects on the world economy that resonate in distinct degrees of sensitivity and macroeconomic vulnerability of countries and microeconomic of global production and consumption chains (SENHORAS, 2020).

According to the International Monetary Fund (IMF, 2020) the pandemic of COVID-19 has a very large impact on the international economy and politics. As much as the risk of a global health crisis caused by a virus coming from Asia has existed for many years, the vast majority of countries have shown themselves to be unprepared for its consequences (GULLO, 2020). The research also pointed out that the alternative of *online* attendance is a tool little explored in the dental clinics approached. Although this tool was widely used during the 2020 pandemic period in other areas.

Thus, dental clinics should turn to economic sustainability, seeking financial viability, return on investment, more efficient allocation and management of resources available in the labor market, seeking continuous improvement in science and technology.

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