

THE INFLUENCE OF THE COVID-19 PANDEMIC ON DENTAL CARE IN THE COREDES SERRA, HORTÊNSIAS AND COASTAL REGION OF RS

A INFLUÊNCIA DA PANDEMIA DE COVID-19 NOS ATENDIMENTOS ODONTOLÓGICOS NA REGIÃO COREDES SERRA, HORTÊNSIAS E LITORAL DO RS

LA INFLUENCIA DE LA PANDEMIA COVID-19 EN LA ATENCIÓN DENTAL EN COREDES SERRA, HORTÊNSIAS Y REGIÓN COSTERA DE RS

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ABSTRACT: Aiming to investigate the influence that the restrictions imposed by the COVID-19 pandemic in the year 2020 brought to the daily attendance flow of dental clinics of the Regional Development Councils - COREDEs - Serra, Hortênsias and Coastal Region of Rio Grande do Sul-RS, a quantitative and exploratory research was conducted. The research counted on the participation of 93 dental clinics, who answered the questionnaire used. The data collected revealed that the social/professional isolation during the pandemic period of 2020 not only influenced the economic sustainability of the clinics, but also affected the emotions of these professionals. These reported that, the risk of contagion and the concern of contaminating family members, made them apprehensive. Therefore, it is concluded that there was a socioeconomic and psychological impact, due to a sum of events generated from the COVID-19 pandemic.

KEYWORDS: Pandemic. Dental clinics. COVID-19 prevention. Socioeconomic impact. Psychological impact.

RESUMO: Com objetivo de investigar a influência que as restrições impostas pela pandemia da COVID-19 no ano de 2020 acarretaram ao fluxo de atendimento diário das clínicas odontológicas dos Conselhos Regionais de Desenvolvimento - COREDEs - Serra, Hortênsias e Litoral do Rio Grande do Sul-RS, realizou-se uma pesquisa quantitativa e exploratória. A pesquisa contou com a participação de 93 clínicas odontológicas, que responderam ao questionário utilizado. Os dados coletados revelaram que o isolamento social/profissional durante o período pandêmico de 2020, não só influenciou na sustentabilidade econômica das clínicas, como também afetou nas emoções destes profissionais. Esses relataram que, o risco de contágio e a preocupação de contaminar os familiares, deixava-os apreensivos. Portanto,

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conclui-se que houve um impacto socioeconômico e psicológico, devido a um somatório de acontecimentos gerados a partir da pandemia COVID-19.

PALAVRAS-CHAVE: *Pandemia. Clínicas odontológicas. Prevenção à COVID-19. Impacto socioeconômico. Impacto psicológico.*

RESUMEN: *Con el objetivo de investigar la influencia que las restricciones impuestas por la pandemia de COVID-19 en el año 2020 trajeron al flujo de asistencia diaria de las clínicas dentales de los Consejos Regionales de Desarrollo - COREDEs - Serra, Hortênsias y Litoral de Rio Grande do Sul-RS, se realizó una investigación cuantitativa y exploratoria. La investigación contó con la participación de 93 clínicas dentales, que respondieron al cuestionario utilizado. Los datos recogidos revelaron que el aislamiento social/profesional durante el periodo de pandemia de 2020, no sólo influyó en la sostenibilidad económica de las clínicas, sino que también afectó a las emociones de estos profesionales. Estos informaron que, el riesgo de contagio y la preocupación de contaminar a los miembros de la familia, les hacía ser aprensivos. Por lo tanto, se concluye que hubo un impacto socioeconómico y psicológico, debido a una suma de eventos generados a partir de la pandemia de COVID-19.*

PALABRAS CLAVE: *Pandemia. Clínicas dentales. Prevención de COVID-19. Impacto socioeconómico. Impacto psicológico.*

Introduction

The emergence of SARS-coV-2, agent of the disease COVID-19, in Wuhan in China in 2019, triggered a global pandemic, which extends to the present day. In the Brazilian territory, the health area adopted emergency strategies to combat the contagion of COVID-19, having the primary health care of Brazilians as its focus. Among the guidelines there was the suspension of elective dental care, keeping only the urgent and emergency procedures, to reduce the likelihood of cross-contamination (BRASIL, 2020a; BRASIL, 2020b).

In dentistry, a latent concern in times of pandemic involves the fact that during dental procedures there is a marked production of droplets and aerosols, which requires biosafety measures in dental clinics, however not being an absolute impediment in the transmissibility of COVID-19. This aspect is, according to Meng, Hua and Bian (2020), especially associated with asymptomatic patients since they represent potential transmitters during dental procedures.

In this horizon, dental surgeons played an essential role in the execution of actions to control COVID-19. Since, the dental surgeons are among the professionals working in the front line of the fight against the virus, acting in actions of disease prevention not restricted only to oral care. Thus, as a mechanism of prevention and control of COVID-19, it has been

recommended that dental surgeons reinforce safety measures by means of personal protective equipment (PPE) and avoid, when possible, performing procedures involving aerosols and droplets (AMIB/CFO, 2020). In addition to maintaining a constant maintenance of clinical environments, keeping a rigorous asepsis, to have clean and dry environments, to not spread the COVID-19 virus.

In view of the above, the impacts that the restrictions imposed by the Ministry of Health (BRASIL, 2020) and by the Federal Council of Dentistry-CFO (2020) had on the daily attendance flow of the dental clinics that are part of the Regional Development Councils (COREDEs) - Serra, Hortênsias, and Coastal Region of Rio Grande do Sul (RS) were investigated.

The influence of the pandemic on dental care

The restrictions imposed by the health agencies caused not only reflections on the economy, but also brought/traced psychological effects, and it became essential to seek ways to maintain mental health care (OSÓRIO *et al.*, 2021). As Osório *et al.* (2021) suggest, uncertainty, plus the feeling linked to the social and economic consequences that apparently precede isolation for daily, social, and professional life. Since, some people express longing for their family, stating that their economy is affected because they lost their job, others report feeling distressed for family members who must attend work, sadness for the most vulnerable, concern for family finances. Taking into consideration that, the virus is highly transmissible, so that interactions pose a risk of severe contamination in 19% of cases (KANG *et al.*, 2020), and that the effectiveness of clinical management protocols is uncertain (PFEFFERBAUM; NORTH, 2020), preventive and strict measures have become necessary and indispensable during the pandemic of COVID-19.

Research conducted in several countries reveals that health care workers working on the front lines against COVID-19 have experienced the highest rates of mental disorders. The meta-analysis conducted by De Pablo *et al.* (2020) found that 63% of workers have a general concern about their health, 44% fear contagion, and 38% experience insomnia. For Conti *et al.* (2020) the main impacts would be related to insecurity, the constant state of alert, depressive symptoms such as, sadness, loneliness, loss of sleep quality and demotivation, as well as greater emotional instability. According to Gameiro (2020), it is estimated that 30% to 50% of the population may suffer some psychopathological manifestation if no care is promoted. According to Osório *et al.* (2021) “stress is a risk factor for several mental

disorders”, on the other hand, “panic can be triggered in cases of higher anxiety”, states Mari (2020) psychiatrist. These emotional aspects are usually central points to consider in the face of a pandemic.

COVID-19 also brought serious risks to dental surgeons, to the extent that it generated the absence of these professionals from their work routine, in a variable of between 01 and 40 days, according to Gomes *et al.* (2020). This information explains the systemic worsening of COVID-19 in Brazil. The research by Gomes *et al.* (2020) also points out data regarding the decrease in dental consultations, and consequently the drop in billing, caused by the Brazilian economic crisis scenario. However, it was noted a representative economic disparity in the different states of Brazil (CHAMORRO *et al.*, 2020; PASSARELLI *et al.*, 2020). The COVID19 pandemic has not only caused an impact at the public health level, but also a major worldwide economic recession, which has generated job losses and continues to strongly threaten the global economy, societies, and human rights (ONU, 2020).

In this horizon, the present article investigates the influence of COVID-19 in the flow of attendance of dental clinics that are part of the Regional Development Councils (COREDEs) - Serra, Hortênsias and Coastal Region of Rio Grande do Sul (RS). Since dental clinics serve the public directly, it is inferred that in the face of an economic crisis they may have adopted sustainable strategies to stay in the market, and this is the study objective of this article. To this end, the study focuses on aspects such as: number of consultations; percentage of primary care consultations before the pandemic period and percentage of primary consultations during the pandemic period of 2020; how many consultations of specialized care were performed per day in the clinic before the pandemic; and percentage of specialized consultations during the pandemic period of 2020 and the reason for cancellations and rescheduling.

In order to deepen the theme presented here, this research is supported by the literature on pandemic (GULLO, 2020; LIU, KUO, SHIH, 2020; SENHORAS, 2020; XAVIER *et al.*, 2020), sustainability in healthcare (AVINASH *et al.*, 2013; FEIL; MULIMANI, 2017; SCHREIBER, 2017) and sustainability related to the field of dentistry (ARAÚJO, 2010; GLICK, 2016; MORITA; HADDAD, 2020). Next, the research method adopted for the purpose of operationalizing the scientific making proposed herein is presented.

Material and method

This is quantitative exploratory research (SAMPIERI; COLLADO; LUCIO, 2013) linked to doctoral research in Health, related to Dentistry, approved by the Research Ethics Committee (CEP) of the University XXXX (blind review), under the opinion number CAAE: 39814720.9.0000.5341. The present object of study of this article is configured as a cutout of the basic research, in that it focuses specifically on the character of socioeconomic sustainability reported by dental clinics before and during the pandemic of COVID-19. The questionnaire was the data collection instrument applied to the partners owners of dental clinics located in the municipalities that are part of the Regional Development Councils - COREDEs, Serra, Hortênsias, and Coastal Region of Rio Grande do Sul - RS⁴. The research focused on the quantitative character, with the aim of bringing the data obtained closer to the theory and helping in the understanding of the research problem. Regarding the path, in the first phase, a brief presentation of the biosafety guidelines postulated by the health agencies was performed, and in the second phase, data collection from the dental clinics was carried out, while in the third and last phase, the analysis of the results was conducted. The collected data were tabulated and classified based on the theoretical-methodological contribution adopted in this research.

Regarding data collection, concerning the flow of care in dental clinics, this was done by means of a semi-structured questionnaire, composed of 27 questions, namely 16 open questions and 11 closed questions. For this study, an investigative cut was made from 04 dissertative questions, namely about aspects such as (a) number of primary care consultations before the pandemic (b) number of daily primary care consultations during the pandemic; (c) number of daily specialist consultations during the pandemic; (d) number of daily specialist consultations before the pandemic. The clinics were ranked by numbers from 1 to 126, among the participating clinics 47 returned blank.

In view of the above, we investigated the impacts that the restrictions imposed by the Ministry of Health (BRASIL, 2020) and by the Federal Council of Dentistry-CFO (2020) had on the daily flow of dental clinics. In this regard, the research had the participation of 126 dental clinics that answered the survey instrument. The questionnaire was applied in person between January 6th and May 31st, 2021, when it was delivered and later collected. The

⁴ 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, Hortênsias), Torres, Capão da Canoa and Arroio do Sal (COREDE, Coastal).

sample size calculation was done using the *Statulator software*⁵. As for the factor of interest, with a population size of 220 respondents, the study required a minimum sample size of 140 respondents. In other words, it is inferred that, from 140 respondents, 50% of them had a factor of interest, which represented a 95% confidence factor. However, only 93 questionnaires were counted, since 47 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 support in economic sustainability (DE OLIVEIRA *et al.*, 2020; GULLO, 2020; MILLER, 2019; NETO, 2020) of economic management (FERRAZ, 2020; SCHWENDICKE; KROIS; GOMEZ, 2020). The results of the research are presented below.

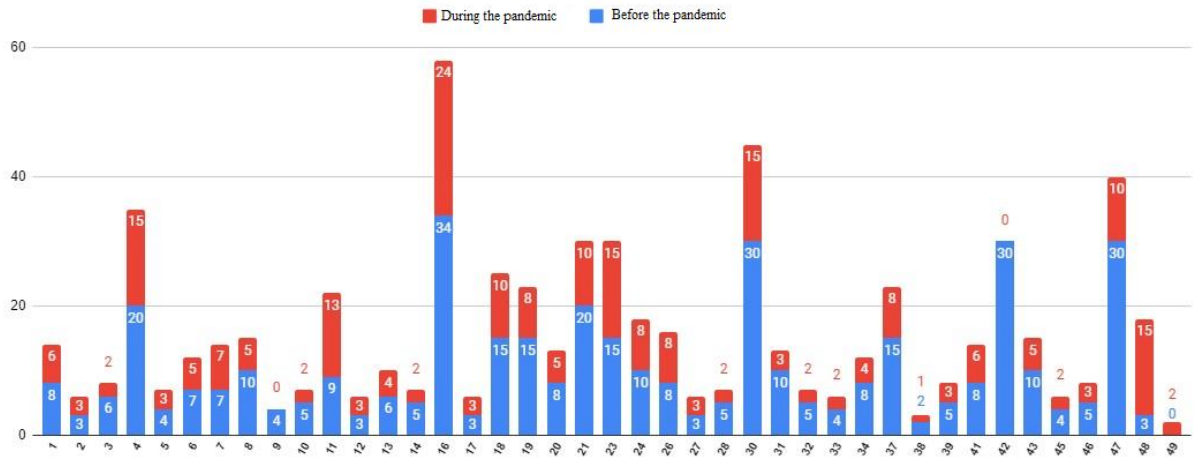
Results

The application of the data collection instrument occurred with the effective participation of 93 dental clinics, 12 clinics per city were randomly chosen. It is worth mentioning that, initially, 140 questionnaires were delivered, of which 14 did not answer the questionnaire and 33 did not answer the 04 dissertative questions, totaling the exclusion of 47 clinics from this research. The mentioned municipalities make up the Regional Development Councils - COREDEs, Serra, Hortênsias and Coastal Region of Rio Grande do Sul -RS. To preserve the identity of the participating clinics, they were numbered from 1 to 126 and the data were registered according to the number assigned.

In order to organize the data obtained and treated in this research, we present charts 1a, 1b, and 1c, which show the flow of consultations during the pandemic in 2020 in dental clinics. The data presented were distributed in three parts, so that it was possible to present the reader with a panoramic view of the entire flow of consultations.

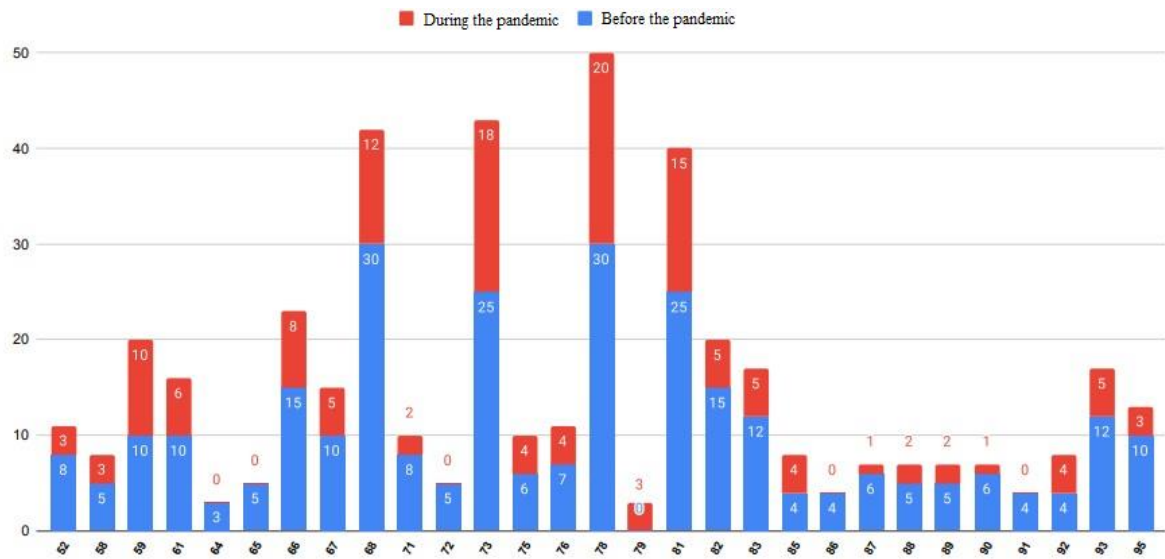
⁵ Available at: <https://statulator.com/SampleSize/ss1P.html>. Access: 20 Jan. 2021.

Figure 1



Source: Prepared by the authors

Figure 2



Source: Prepared by the authors

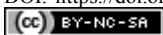
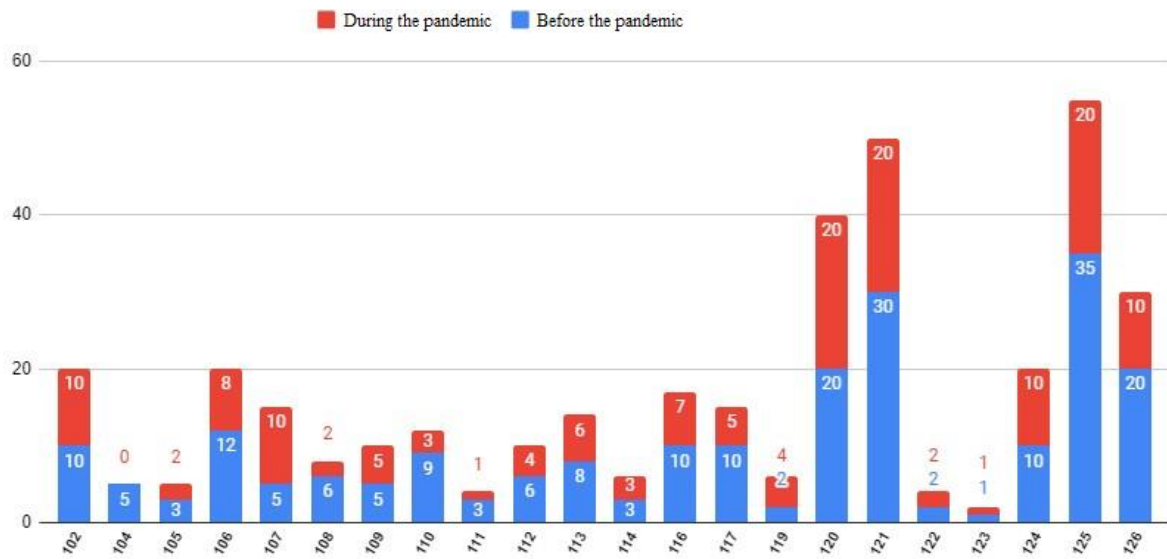


Figure 3



Source: Prepared by the authors

Based on the data presented, it was found that the average number of primary care consultations before the pandemic period was 10 and during the pandemic period was 5 (50% decrease), and in the specialist consultations before the pandemic period was 11 and during the pandemic period was 6 (45% decrease). As a result of the cancellations, the surgeons had a reduction in income and an increase in office expenses. According to the dental surgeons, the cancellations of appointments occurred in the first six (6) months of the COVID-19 pandemic in 2020, which revealed a significant concern from the psychological point of view of patients regarding the possibility of infection and transmission to their families, a result also mentioned in the research conducted by Osório *et al.* (2021). The data pointed out that the preventive measures that were taken in order to mitigate the impacts of the pandemic, having as main strategy the *lock-down* (confinement) in distinct periods and durations, depending on the elevation of contamination, caused a drop in economic activity, which affected the economic condition of patients and dental clinics (BRASIL, 2020a; 2020b). That is, the restrictions imposed by the Ministry of Health (BRASIL, 2020) and by the CFO (2020) directly affected the flow of attendance in dental clinics that may have had repercussions on the ways of conducting the clinic management.

The dental surgeons reported that there was a shortage of demand for medical care, a reduction in suppliers of supplies, and an increase in the cost of personal protective

equipment. These factors triggered an economic impact and possible emotional stress on dental professionals during the COVID-19 pandemic.

Final considerations

Dentistry has been considered one of the professions with the highest occupational risk, due to the intimate contact and the relationship with saliva and blood. In view of this, it has become indispensable to adopt very strict and costly preventive measures, as well as, initially, to attend only emergency consultations.

Although social distancing is considered one of the main strategies to prevent viral transmission during the pandemic of COVID-19, they had a negative influence on the economy. The survey showed a decrease in dental care during the COVID-19 pandemic, with an average of 10 visits and 5 during the pandemic (50% decrease), while before the pandemic period there were 11 visits and 6 during the pandemic (45% decrease). According to reports from the dental surgeons, cancellations of appointments occurred in the first six (6) months of the COVID-19 pandemic in the year 2020, which revealed an expressive personal and emotional involvement of patients in this challenging context. The social and professional isolation during the 2020 pandemic period, not only influenced the economic sustainability of the clinics, but also affected the emotions of these professionals, they reported that, the risk of contagion and the concern of contaminating family members, left them in constant agony. Dantas *et al.* (2020), postulates that “the COVID-19 pandemic has already caused a collective grieving process in the population for the loss of normal life and is likely to aggravate the grief experienced by family members and friends of those who die from Covid”. Added to this, there were also the restrictions imposed by the National Health Surveillance Agency (ANVISA, 2020) recommending that elective dental care be postponed, restricting clinical care to urgent and emergency cases only. Complementarily, the Brazilian Intensive Care Medicine Association (AMIB), together with the Federal Council of Dentistry (CFO), recommended that patients with suspected or COVID-19 requiring urgent and emergency care should have treatment performed with biosafety precautions for the entire team (AMIB/CFO, 2020). It is worth noting that these recommendations suggested by AMIB and CFO do not have the power of law, but are the basis for decision making by the relevant managers.

For Da Silva *et al.* (2020), the protective measures used before the pandemic are not fully effective to prevent contamination by COVID-19, causing apprehension in professionals

and the need to acquire knowledge about the forms of prevention and control of COVID-19. According to Pereira and Kemper (2020), the adoption of modifications in the physical organization of outpatient clinics and in their service routines, the strictness in biosafety protocols and the criteria regarding the performance of elective treatments seem to be the key to success in facing the new challenges of dental services.

Therefore, it was understood that dentistry was influenced by this pandemic period, however, the old biosafety precepts are the foundation of the conducts to be followed until technical innovations can be scientifically proven and made viable for dental services. Therefore, we conclude that there was a widespread economic and psychological impact due to a total of events caused by the COVID-19 pandemic.

It is worth pointing out that the field research and the writing of this paper were conducted during the pandemic, that is, the pandemic is still going on, and so the legal provisions addressed here are constantly being updated and/or modified.

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