Impact of the absence of dental support on cancer patients during the COVID-19 pandemic

Verônica Caroline Brito Reia (✉ veronicabr@usp.br)

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

<https://orcid.org/0000-0003-1352-5474>

Maria Gabriela Robles-Mengoa

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Bernardo da Fonseca Orcina

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Milenka Gabriela Quenta-Huayhua

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Mailon Cury Carneiro

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Brena Rodrigues Manzano

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Anderson Prestes

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Cássia Maria Fischer Rubira

University of Sao Paulo Campus of Bauru: Universidade de Sao Paulo Campus de Bauru

Paulo Sérgio da Silva Santos

University of Sao Paulo

Research Article

Keywords: Health Care, Telemedicine, Mouth Diseases, Coronavirus Infections, Online Service

Posted Date: November 17th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-991096/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Purpose

With the suspension of routine services due to the coronavirus disease-2019 (COVID-19) pandemic, a significant number of the population has been presenting acute oral alterations without proper treatment. Through telecontact, this study aimed to identify individuals in treatment and had been treated for cancer who had their clinical dental care interrupted by the COVID-19 pandemic.

Methods

Individuals with oncologic diseases were selected from a telephone list of a clinical research center specializing in the care of cancer patients. We included those who answered an online questionnaire about their general health status and oral problems when they were unable to access dental care during the pandemic. Statistical analysis was performed using Fisher and Chi-square tests. The significance level was set at 5% ($p < 0.05$).

Results

Of the 280 patients recruited, 104 answered the questionnaire. There were 75 (72.1%) were women, of which 22 (36.7%) were under antineoplastic treatment, and 30 (68.2%) had already been treated; 29 (27.9%) were men, of which 15 (25.0%) were under antineoplastic treatment and 14 (31.8%) had already been treated. Of the universal sample, 64 (61.5%) had no complaints regarding their general health, and 74 (71.1%) had no difficulties in their daily activities due to teeth/mouth problems. However, the rates of oral problems were not statistically significant ($p = \text{NS}$).

Conclusion

In dentistry, telephone support and digital tools are useful and necessary instruments for the follow-up of cancer patients during the pandemic.

Introduction

In early March 2020, the World Health Organization declared the outbreak of the disease coronavirus disease-2019 (COVID-19) as a pandemic. In an attempt to control it, social isolation was one of the main strategies proposed. Thus, the confinement of the population and the impact of the outbreak on healthcare systems have disrupted the routine care required by COVID-19-negative patients [1].

Dental practice involves a high risk of infection by the severe acute respiratory syndrome coronavirus 2 since the procedures performed require close approaches to the nasopharyngeal and oropharyngeal

regions, which are directly linked to the pathophysiology of COVID-19. In addition, the frequent contact with saliva, blood, and other body fluids of patients, handling of sharp instruments, and constant production of aerosols also increase the risk of infection [2]. Given all these factors, dental surgeons are the most vulnerable health professionals to disease infection [3, 4].

As a preventive measure, most countries suspended elective dental care [5]. Brazil was no exception, and both the Federal Council of Dentistry and the National Health Surveillance Agency recommended limiting dental care to urgent and emergency cases [4, 6]. With the suspension of routine services, a significant number of the population has presented with acute oral changes without proper treatment [7].

Oral health has a significant impact on the quality of life of immunosuppressed patients, such as organ and tissue transplant patients and those who are or have been under cancer treatments [3], since the dental support to these individuals mitigates the repercussions arising from the therapies for these diseases [8]. The suspension of clinical care and lack of dental care for these individuals may exacerbate the adverse effects of medical treatments, causing pain and discomfort in the mouth. Therefore, dental surgeons are increasingly seeking alternative approaches to provide supportive care to these groups of patients to reduce the impact of oral problems on their quality of life.

Teleconsultation is one of the tools used for distance care during the pandemic in various areas of health, using applications and social media [9]. While it facilitates communication and guidance between the professional and the patient, this practice has not yet been established by the regulatory authorities of dentistry. Therefore, through virtual/telephone contact, this study aimed to identify individuals under treatment and who had already been treated for some type of cancer who underwent dental treatment in 2019 and had their clinical care interrupted by the pandemic caused by COVID-19 in 2020.

Methods

Approval was obtained from the Human Research Ethics Committee of the Bauru School of Dentistry, University of São Paulo (CAAE: 39316520.2.0000.5417). The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Sample

This cross-sectional study was conducted in a clinical research center specializing in the care of systemically compromised individuals in the areas of oncology and organ and tissue transplantation. It included patients who underwent dental treatment in 2019 but did not receive care in 2020 due to the suspension of clinical dental care during the COVID-19 pandemic. Individuals over 18 years old who were able to communicate remotely by email or messaging applications were selected from the institution's updated phone list.

Questionnaire

A two-part online questionnaire was sent via Google Forms: (I) Sociodemographic and Health Data and (II) Structured Questionnaire, along with the informed consent form. The topics in the first part of the questionnaire included sex, age, occupation, underlying disease (location), and type of systemic and/or antineoplastic treatment. The second part of the questionnaire was composed of previously established structured questions and questions about their overall oral problems when they had no access to dental care during the COVID-19 pandemic.

Data analysis

A database covering the patients' responses was tabulated using Microsoft Office Excel 2016 (Microsoft Corporation, Redmond, WA, USA) spreadsheets. Statistical analysis of the obtained data was performed using the Fisher test in IBM SPSS V21 Software (IBM; Armonk, New York, United States) and the Chi-square test in Jamovi Project 2020 (Version 1.2) and R Core Team 2019 (Version 3.6) software. Frequency tables with percentages and graphs were used to verify the possible associations between the variables evaluated. The significance level was set at 5% ($p < 0.05$).

Results

A total of 280 patients with a history of oncologic disease were recruited through the Clinical Research Center's phone book. Of these, it was possible to establish contact remotely with the 151 individuals who agreed to participate in the online survey. Of them, 104 answered the questionnaire through the Google Form platform. The other 129 individuals did not participate in the survey for the following reasons: 42 had died during the pandemic; eight were minors; 19 did not answer the calls after several attempts; nine answered, but the number did not correspond to the individual; 33 phone numbers were unable to receive calls or were outside the coverage area; 15 did not agree to participate in the survey; and three individuals were bedridden/inpatients.

Tables 1, 2, and 3 present the sociodemographic and health data, general structured questions previously established for this research on the general health status of the individuals, and the data on the oral problems related to those undergoing treatment for cancer compared to previously treated patients who had dental treatment in 2019 but did not receive care during the COVID-19 pandemic.

In the final sample, of the 104 individuals who completed the questionnaire, 75 (72.1%) were women, and 29 (27.9%) were men. A total of 47 (45.2%) individuals were over 60 years old, 43 (41.3%) were 46 to 60 years old, 8 (7.7%) were 31 to 45 years old, and 6 (5.8%) were 18 to 30 years old. Among the occupations, 48 (46.2%) were retired; 18 (17.3%) were housekeepers; and 38 (36.5%) had other activities, such as teaching, working in the public area, practicing law, hairdressing, masonry, etc. Breast cancer was the most prevalent cancer, affecting 35 (33.7%) patients. As for the antineoplastic treatments, 89 (85.6%) received chemotherapy (QT), 43 (41.3%) received radiotherapy (RT) of the head and neck, and those who underwent RT showed statistically significant results ($p < 0.001$) compared to those who underwent QT ($p > 0.05$) (Table 1).

Of the 104 individuals, 64 (61.5%) had no complaints regarding their general health. In addition, eight (7.7%) patients had a confirmed diagnosis of COVID-19, with mild symptoms in six patients (5.8%) and severe symptoms in two (1.9%). Regarding general health, 57 (54.8%) had a worsened status due to a lack of dental care. Questioned about the difficulty in performing daily activities caused by problems in the teeth and/or mouth, 74 (71.1%) did not experience any difficulties. In contrast, 51 (49.0%) patients sought dental care during the pandemic, and 30 (58.8%) of these were still undergoing oncologic treatment. A total of 42 (40.4%) individuals postponed their treatments other than dental care; however, 93 (89.4%) did not decrease the frequency of tooth brushing during the pandemic and social isolation. In addition, 94 (90.4%) individuals did not receive any type of supervision or monitoring via telephone during the pandemic, and of these, 56 (53.8%) were still on oncology treatment (Table 2).

Regarding the oral problems of individuals who were left without dental care during the COVID-19 pandemic, there was no statistically significant difference ($p=NS$) between those who were and were not being treated for cancer. Regarding oral problems that arose during the pandemic in the 104 cancer survivors, the most commonly reported was dental pain when eating hot or cold food or drinks (59, 57.0%), followed by muscle pain (56, 53.8%), and difficulty when chewing (53, 51.0%). In contrast, the least reported were the presence of purulent secretion (31, 29.8%), spontaneous gingival bleeding (33, 29.8%), and spontaneous dental pain (37, 35.6%) (Table 3). However, even though these were reported by the individuals, the rates of oral problems did not show statistical significance ($p=NS$).

Discussion

The majority of our study population were women, and breast cancer was the most prevalent, in line with the estimates and projections of this cancer both in the southeastern region of Brazil and globally [10, 11]. Chemotherapy was the most prevalent treatment in both groups of patients. For the 52 (50%) who were still undergoing antineoplastic treatment, the need for monitoring by a specialized dental service to mitigate the acute complications of this treatment is highlighted [12]. Similarly, patients who are undergoing head and neck radiotherapy with the likely demand for the acute effects of radiotherapy [13] and even those who have already received this therapeutic modality need constant monitoring to avoid or treat the late manifestations of radiotherapy treatment [14].

Globally, numerous governments have mobilized their forces to mitigate COVID-19, making the enforcement of non-pharmacological interventions, such as keeping the population at home and closing non-essential services, indispensable. Furthermore, it can be observed that these large-scale measures were effective in reducing the spread of the virus [15], given that only eight individuals in the study tested positive for the disease. On the other hand, some public dental care services had to be closed, causing a decrease in pediatric dentistry services, prosthetic rehabilitation treatments [16], and oral pathology and medicine services [17, 18].

With social isolation and the modernization of the workforce, some individuals experienced reductions in their income, which possibly aggravated the negative effects on oral health. The majority of those under

antineoplastic treatment were retired (52%). Among those who have completed therapy, most were currently active in their professions (43%). Diet and oral hygiene were adapted to the new reality, along with other behavioral changes, such as smoking and loss of access to dental services [19]. In this sense, it is known that in times of epidemics, people experience the fear of becoming infected with the virus/disease, resulting in anxiety, stress, and depression [20]. Thus, despite their demands for dental care, the population remains in social isolation [21]. This could explain why only 49.0% of the sample (51 patients) sought dental care services in almost one year of the pandemic, even if 59 patients (56.7%) reported feeling "tooth pain when eating hot or cold food and/or drinks."

The COVID-19 pandemic led to increased rates of anxiety (31.9%) and depression (33.7%) in the normoreactive population [22]. On the other hand, in patients undergoing cancer treatment, trait and state of anxiety were found in 59.1% and 48.4%, respectively [23]. In view of this, another aggravating factor generated by stress is periodontal disease, which was referred to as "teeth softening" in the questionnaire applied. The changes in the patients' supporting tissues may have made them flag this issue. The frequency of periodontal disease in individuals exposed to stress was 15–36% higher than that in healthy individuals [24]. Therefore, in our sample, 48 individuals (46.1%) reported "teeth softening," which could suggest some complications of periodontal nature.

Similarly, both temporomandibular dysfunction and bruxism (sleep or wakefulness) can be caused by psychosocial factors, such as anxiety, stress, depression, and catastrophizing, which are commonly present in cancer patients [25–28]. This could justify why more than half of the sample reported "difficulty when chewing" and "muscle pain in the jaw area when waking up." Moreover, it has already been discussed in the literature that patients experienced an intensification of bruxism and temporomandibular dysfunction symptoms during the pandemic [29].

The accessibility of the Internet and the development of new technologies may favor the use of tools for remote care during the pandemic, such as telesupport in dentistry. This is relevant to society given the changes in the provision of health services [30]. From this perspective, when the team in this study came into contact with individuals, they directly experienced an innovative experience from the perspective of assistance. Most individuals, including those in antineoplastic treatment and those who have already been treated, reported not having received any type of supervision or dental monitoring via telephone or virtually (telesupport) before being contacted by our team, highlighting the novelty of the teleconsultation tool in society [31].

One study reported that the patients' quality of life and emotional functioning were not affected during the COVID-19 pandemic [32], in contrast to the findings of another previous study [33]. This may be because the patients felt safe while the whole population practiced social distancing, which corroborates our finding that the "quality of life related to general health" did not change during the pandemic for most of the individuals in treatment and those already treated. This was not due to the absence of oral complaints but because of the proximity of family members during the lockdown. Being a high-risk group, this proximity emotionally helped most of these individuals feel better during the pandemic, maintaining

a better quality of life. This is important since it occurred even in the absence of dental support; however, the quality of life for a few individuals in treatment and for some who had already been treated was worse, showing COVID-19's impact on this group of patients who are battling cancer.

It has already been discussed in the literature that lack of regular dental visits and poor oral hygiene were associated with worse survival in cancer patients [34]. It was emphasized that in this study, both groups of patients had already received instructions and recommendations on the importance of oral hygiene since their first face-to-face visit before the pandemic began. The team of professionals specializing in the care of cancer patients educated the individuals about the importance of routinely performing oral care. Although we are still facing one of the biggest health crises in the world during this study, the result of all this dedication was evident when we saw that most of the interviewed individuals did not reduce their frequency of brushing during this period.

A limitation of this study was that it was not possible to establish telephone contact with all the individuals initially listed since most of them had died due to the progression of the underlying diseases during the pandemic, which required social isolation. Future research is needed to explore the main oral complaints in pediatric oncology patients and in individuals with other systemic diseases.

In conclusion, telephone support in dentistry and the use of digital tools proved to be practical and necessary for the follow-up of cancer patients during the pandemic.

Declarations

Funding: This study was financed by the Coordination for the improvement of Higher Education Personnel – Brasil (CAPES) - Finance Code 001.

Conflicts of interest/Competing interests: The authors have no conflicts of interest to declare that are relevant to the content of this article.

Availability of data and material: All data and material are available on reasonable request.

Code availability: Not applicable.

Authors' contributions: Conceptualization: [Verônica Caroline Brito Reia, Maria Gabriela Robles, Bernardo da Fonseca Orcina, Milenka Gabriela Quenta Huayhua, Mailon Cury Carneiro]; Methodology: [Verônica Caroline Brito Reia, Maria Gabriela Robles, Bernardo da Fonseca Orcina, Milenka Gabriela Quenta Huayhua, Mailon Cury Carneiro; Brena Rodrigues Manzano, Anderson Prestes, Cássia Maria Fischer Rubira, Paulo Sérgio da Silva Santos]; Statistical analysis [Brena Rodrigues Manzano]. All authors reviewed, approved the final version of the manuscript, and certified that they comply with the ethical guidelines for publishing in the Supportive Care in Cancer.

Ethics approval and consent to participate: This study approval was obtained from the Human Research Ethics Committee of the Bauru School of Dentistry, University of São Paulo (CAAE:

39316520.2.0000.5417) and the procedures used adhere to the tenets of the Declaration of Helsinki.

Consent for publication: Patients signed informed consent regarding publishing their data with the assurance identifying details would be removed.

References

- 1- Ohannessian R, Duong TA, Odone A. Global Telemedicine Implementation and Integration Within Health Systems to Fight the COVID-19 Pandemic: A Call to Action. *JMIR Public Health Surveill.* 2020;6(2):e18810. <https://doi.org/10.2196/18810>.
- 2- Peng X, Xu X, Li Y et al. Transmission routes of 2019-nCoV and controls in dental practice. *Int J Oral Sci.* 2020;12,9. <https://doi.org/10.1038/s41368-020-0075-9>.
- 3- Martins-Chaves RR, Gomes CC, Gomez RS. Immunocompromised patients and coronavirus disease 2019: a review and recommendations for dental health care. *Braz Oral Res.* 2020;34:e048. <https://doi.org/10.1590/1807-3107bor-2020.vol34.0048>.
- 4- Telles-Araujo GT, Caminha RDG, Kallás MS, Santos PSDS. Teledentistry support in COVID-19 oral care. *Clinics (São Paulo).* 2020 Jun 12;75:e2030. <https://doi.org/10.6061/clinics/2020/e2030>.
- 5- Al-Maweri SA, Halboub E, Warnakulasuriya S. Impact of COVID-19 on the early detection of oral cancer: A special emphasis on high risk populations. *Oral Oncol.* 2020;106:104760. <https://doi.org/10.1016/j.oraloncology.2020.104760>.
- 6- Santana LADM, Santos MALD, Albuquerque HIM, Costa SFDS, Rezende-Silva E, Gercina AC, Takeshita WM. Teledentistry in Brazil: a viable alternative during COVID-19 pandemic. *Rev Bras Epidemiol.* 2020;23:e200082. <https://doi.org/10.1590/1980-549720200082>.
- 7- Patel T, Wong J. The role of real-time interactive video consultations in dental practice during the recovery and restoration phase of the COVID-19 outbreak. *Br Dent J.* 2020;229, 196–200. <https://doi.org/10.1038/s41415-020-1918-7>.
- 8- Yadav V, Kumar V, Sharma S, Chawla A and Logani A. Palliative dental care: Ignored dimension of dentistry amidst COVID-19 pandemic. *Spec Care Dentist.* 2020; 40: 613-615. <https://doi.org/10.1111/scd.12517>.
- 9- Villa A, Sankar V, Shiboski C. Tele(oral)medicine: A new approach during the COVID-19 crisis. *Oral Dis.* 2021 Apr;27 Suppl 3:744-745. <https://doi.org/10.1111/odi.13364>.
- 10- Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2018: A incidência de câncer no Brasil. Rio de Janeiro: INCA; 2017.

- 11- Ferlay J, Colombet M, Soerjomataram I, Mathers C, Parkin DM, Piñeros M, Znaor A, Bray F. Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. *Int J Cancer*. 2019;144(8):1941-1953. <https://doi.org/10.1002/ijc.31937>.
- 12- Fu B, Wang N, Tan HY, Li S, Cheung F, Feng Y. Multi-Component Herbal Products in the Prevention and Treatment of Chemotherapy-Associated Toxicity and Side Effects: A Review on Experimental and Clinical Evidences. *Front Pharmacol*. 2018;29:9:1394. <https://doi.org/10.3389/fphar.2018.01394>.
- 13- Oba MK, Innocentini LMAR, Viani G, Ricz HMA, de Carvalho Reis T, Ferrari TC, de Macedo LD. Evaluation of the correlation between side effects to oral mucosa, salivary glands, and general health status with quality of life during intensity-modulated radiotherapy for head and neck cancer. *Support Care Cancer*. 2021;29(1):127-134. <https://doi.org/10.1007/s00520-020-05454-5>.
- 14- Van der Veen J, Nuyts S. Can Intensity-Modulated-Radiotherapy Reduce Toxicity in Head and Neck Squamous Cell Carcinoma? *Cancers (Basel)*. 2017;6;9(10):135. <https://doi.org/10.3390/cancers9100135>.
- 15- Flaxman S, Mishra S, Gandy A et al. Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe. *Nature*. 2020;584,257–261. <https://doi.org/10.1038/s41586-020-2405-7>.
- 16- Chisini LA, Costa FDS, Demarco GT, da Silveira ER, Demarco FF. COVID-19 pandemic impact on paediatric dentistry treatments in the Brazilian Public Health System. *Int J Paediatr Dent*. 2021;31(1):31-34. <https://doi.org/10.1111/ipd.12741>.
- 17- Machado RA, Bonan PRF, Martelli PJL, Alves FA, Martelli-Júnior H. Brazilian oral medicine and oral histopathology services: The worrying reality in the COVID-19 Era. *Oral Dis*, 2020. <https://doi.org/10.1111/odi.13624>.
- 18- da Cunha AR, Antunes JLF, Martins MD, Petti S and Hugo FN. The impact of the COVID-19 pandemic on oral biopsies in the Brazilian National Health System. *Oral Dis*, 2021. <https://doi.org/10.1111/odi.13620>.
- 19- Daly J, Black EAM. The impact of COVID-19 on population oral health. *Community Dent Health*. 2020;37(4):236-238. https://doi.org/10.1922/CDH_Dec20editorialDalyBlack03.
- 20- Hall RC, Hall RC, Chapman MJ. The 1995 Kikwit Ebola outbreak: lessons hospitals and physicians can apply to future viral epidemics. *Gen Hosp Psychiatry*. 2008;30(5):446-452. <https://doi.org/10.1016/j.genhosppsych.2008.05.003>.
- 21- Torales J, O'Higgins M, Castaldelli-Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. *Int J Soc Psychiatry*. 2020;66(4):317-320. <https://doi.org/10.1177/0020764020915212>.
- 22- Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, Rasoulpoor S, Khaledi-Paveh B. Prevalence of stress, anxiety, depression among the general population during the

COVID-19 pandemic: a systematic review and meta-analysis. *Global Health*. 2020;16(1):57. doi <https://doi.org/10.1186/s12992-020-00589-w>.

23- Miaskowski C, Paul SM, Snowberg K, Abbott M, Borno H, Chang S, Chen LM, Cohen B, Hammer MJ, Kenfield SA, Kober KM, Levine JD, Pozzar R, Rhoads KF, Van Blarigan EL, Van Loon K. Stress and Symptom Burden in Oncology Patients During the COVID-19 Pandemic. *J Pain Symptom Manage*. 2020;60(5):e25-e34. <https://doi.org/10.1016/j.jpainsymman.2020.08.037>.

24- Coelho JMF, Miranda SS, da Cruz SS et al. Is there association between stress and periodontitis? *Clin Oral Invest*. 2020;24, 2285–2294. <https://doi.org/10.1007/s00784-019-03083-9>.

25- De Leeuw R, Klasser GD. Differential diagnosis and management of TMDs. In *Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management/American Academy of Orofacial Pain*, 6th ed.; De Leeuw, R.

26- Wieckiewicz M, Zietek M, Smardz J, Zenczak-Wieckiewicz D, Grychowska N. Mental Status as a Common Factor for Masticatory Muscle Pain: A Systematic Review. *Front Psychol*. 2017;9;8:646. <https://doi.org/10.3389/fpsyg.2017.00646>.

27- Manfredini D, Arreghini A, Lombardo L, Visentin A, Cerea S, Castroflorio T, Siciliani G. Assessment of Anxiety and Coping Features in Bruxers: A Portable Electromyographic and Electrocardiographic Study. *J. Oral Facial Pain Headache*. 2016;30,249–254.

28- Manfredini D, Fabbri A, Peretta R, Guarda-Nardini L, Lobbezoo F. Influence of psychological symptoms on home-recorded sleep-time masticatory muscle activity in healthy subjects. *J Oral Rehabil*. 2011;38(12):902-11. <https://doi.org/10.1111/j.1365-2842.2011.02226.x>.

29- Emodi-Perlman A, Eli I, Smardz J, Uziel N, Wieckiewicz G, Gilon E, Grychowska N, Wieckiewicz M. Temporomandibular Disorders and Bruxism Outbreak as a Possible Factor of Orofacial Pain Worsening during the COVID-19 Pandemic-Concomitant Research in Two Countries. *J Clin Med*. 2020;12;9(10):3250. <https://doi.org/10.3390/jcm9103250>.

30- Giudice A, Barone S, Muraca D et al. Can Teledentistry Improve the Monitoring of Patients during the Covid-19 Dissemination? A Descriptive Pilot Study. *Int J Environ Res Public Health*. 2020;17(10):3399. Published 2020 May 13. <https://doi.org/10.3390/ijerph17103399>.

31- Wright JH, Caudill R. Remote treatment delivery in response to the COVID-19 pandemic. *Psychother Psychosom*. 2020;89(3):1. <https://doi.org/10.1159/000507376>.

32- Jeppesen SS, Bentsen KK, Jørgensen TL, Holm HS, Holst-Christensen L, Tarpgaard LS et al. Quality of life in patients with cancer during the COVID-19 pandemic - a Danish cross-sectional study (COPICADS). *Acta Oncologica*. 2021;60(1):4-12. <https://doi.org/10.1080/0284186X.2020.1830169>.

33- Nolte, S., Liegl, G., Petersen, M.A., Aaronson, N.K., Costantini, A., Fayers, P.M., Groenvold, M., Holzner, B., Johnson, C.D., Kemmler, G., Tomaszewski, K.A., Waldmann, A., Young, T.E., Rose, M., 2019. General population normative data for the EORTC QLQ-C30 health-related quality of life questionnaire based on 15,386 persons across 13 European countries, Canada and the Unites States. *European Journal of Cancer* 107, 153–163. <https://doi.org/10.1016/j.ejca.2018.11.024>.

34- Chang CC, Lee WT, Hsiao JR, Ou CY, Huang CC, Tsai ST, Chen KC, Huang JS, Wong TY, Lai YH, Wu YH, Hsueh WT, Wu SY, Yen CJ, Chang JY, Lin CL, Weng YL, Yang HC, Chen YS, Chang JS. Oral hygiene and the overall survival of head and neck cancer patients. *Cancer Med*. 2019;8(4):1854-1864. do <https://doi.org/10.1002/cam4.2059>.

Tables

Table 1

		Individuals under treatment (n= 60)	Individuals already treated (n= 44)
		n (%)	n (%)
Sex	Women	45 (75.0%)	30 (68.2%)
	Men	15 (25.0%)	14 (31.8%)
Age	Between 18 and 30 years old	1 (1.7%)	5 (11.4%)
	Between 31 and 45 years old	7 (11.7%)	1 (2.3%)
	Between 46 and 60 years old	24 (40%)	19 (43.2%)
	Over 60 years old	28 (46.7%)	19 (43.2%)
Occupation	Retired	31 (51.7%)	17 (38.6%)
	Housekeeper	10 (18.3%)	8 (18.2%)
	In exercise of profession	19 (31.0%)	19 (43.2%)
Baseline Disease (location)	Breast	25 (41.7%)	10 (22.7%)
	Head and neck	11(18.3%)	18 (40.9%)
	Onco-hematologic	8 (13.3%)	11 (25.0%)
	Digestive tract	6 (10.0%)	1 (2.3%)
	Female reproductive system	5 (8.3%)	2 (4.5%)
	Liver renal cells	2 (3.3%)	0 (0.0%)
	Prostate	1 (1.7%)	0 (0.0%)
	Kidney cells	1 (1.7%)	0 (0.0%)
	Pancreas	1 (1.7%)	0 (0.0%)
	Sarcoma	0 (0.0%)	1 (2.3%)
	Osteosarcoma	0 (0.0%)	1 (2.3%)
Antineoplastic treatment	QT:		
	Yes	52 (86.7%)	37 (84.1%)
	No	8 (13.3%)	7 (15.9%)
	RT of the head and neck:		

Yes	16 (26.7%)	27 (61.4%)
No	44 (73.3%)	17 (38.6%)

QT (chemotherapy); RT (radiation therapy); n (number of patients); % (percentage).

Table 2

		Individuals under treatment (n=60) n (%)	Individuals already treated (n=44) n (%)	p- value
Main complaint, regarding health in general, in times of pandemic and social isolation	Yes	22 (36.7%)	18 (40.9%)	0.666
	No	38 (63.3%)	26 (59.1%)	
Confirmed diagnosis for COVID-19	Yes	4 (6.7%)	4 (9.1%)	0.647
	No	56 (93.3%)	40 (90.9%)	
Worsening of general health due to lack of dental care	Yes	30 (50.0%)	27 (61.4%)	0.250
	No	30 (50.0%)	17 (38.6%)	
Difficulties performing your daily activities because of problems with your teeth or mouth	Yes	15 (25.0%)	15 (34.1%)	0.312
	No	45 (75.0%)	29 (65.9%)	
Sought dental treatment	Yes	30 (50.0%)	21 (47.7%)	0.819
	No	30 (50.0%)	23 (52.3%)	
Postponed any treatment other than dental treatments	Yes	24 (40.0%)	18 (40.9%)	0.926
	No	36 (60.0%)	26 (59.1%)	
Decreased frequency of tooth brushing	Yes	7 (11.7%)	4 (9.1%)	0.673
	No	53 (88.3%)	40 (90.9%)	
Dental supervision or monitoring via telephone or virtual methods (telephone assistance)	Yes	4 (6.7%)	6 (13.6%)	0.234
	No	56 (93.3%)	38 (86.4%)	

COVID-19 (coronavirus disease 2019); n (number of patients); % (percentage), Fisher's test and chi-square test.

Table 3

		Individuals under treatment (n=60)	Individuals already treated (n=44)	p- value
		n° (%)	n° (%)	
Mouth sores	Yes	21 (35.0%)	19 (43.2%)	0.793
	No	39 (65.0%)	25 (56.8%)	
Difficulty chewing	Yes	26 (43.3%)	27 (61.5%)	0.069
	No	34 (56.7%)	17 (38.6%)	
Difficulty swallowing	Yes	19 (31.7%)	21 (47.7%)	0.201
	No	41 (68.3%)	23 (52.3%)	
Decreased amount of saliva	Yes	25 (41.7%)	22 (50.0%)	0.141
	No	35 (58.3%)	22 (50.0%)	
Impaired eating	Yes	24 (40.0%)	20 (45.5%)	0.567
	No	36 (60.0%)	24 (54.5%)	
Difficulty resting because of problems with teeth and/or mouth	Yes	25 (41.7%)	20 (45.5%)	0.577
	No	35 (58.3%)	24 (54.5%)	
Spontaneous gingival bleeding	Yes	18 (30.0%)	15 (34.1%)	0.302
	No	42 (70.0%)	29 (65.9%)	
Gingival bleeding induced during tooth brushing	Yes	23 (38.3%)	23 (52.3%)	0.293
	No	37 (61.7%)	21 (47.7%)	
Tooth pain when ingesting hot or cold food and/or drinks	Yes	32 (53.5%)	27 (61.4%)	0.712
	No	28 (46.7%)	17 (38.6%)	
Spontaneous/acute tooth pain	Yes	22 (36.7%)	15 (34.1%)	0.393
	No	38 (63.3%)	29 (65.9%)	
Purulent secretion	Yes	16 (26.7%)	15 (34.1%)	0.716
	No	44 (73.3%)	29 (65.9%)	
Teeth softening	Yes	29 (48.3%)	19 (43.2%)	0.564
	No	31 (51.7%)	25 (56.8%)	
Muscle pain in the jaw area on waking	Yes	32 (53.5%)	24 (54.5%)	0.797
	No	28 (46.7%)	20 (45.5%)	
Bad breath	Yes	24 (40.0%)	18 (40.9%)	0.881
	No			

No	36 (60.0%)
----	------------

26 (59.1%)

n° (number of patients); % (percentage) Fisher's test and chi-square test.