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Posted Date: 20 March 2025

doi: 10.20944/preprints202503.1470.v1

Keywords: Covid-19; Oral health; Oral health habits; dietary habits; pandemic; covid restrictions



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Article

Oral Health and Dietary Habits Before and After the COVID-19 Restrictions: An Observational Study

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Abstract: Background: The declaration of COVID-19 as a pandemic by the World Health Organization in 2020 led to the widespread suspension of clinical practices worldwide, including dentistry. This study aims to evaluate the impact of these restrictions on oral health and dietary habits. **Methods:** A retrospective cross-sectional study was conducted at Egas Moniz University Clinic (Lisbon Metropolitan Area), covering the period from June 2019 to June 2021. A total of 3,380 participants were included and categorized into two cohorts: pre- and post-COVID-19 restrictions. Data was collected through a structured questionnaire assessing oral health behaviors and dietary habits. **Results:** Out of 3,469 incoming patients, 3,380 met the inclusion criteria. Statistically significant post-lockdown changes were observed in body mass index, smoking status, oral hygiene behaviors, and specific dietary patterns such as tobacco and honey consumption, there was a decreased use of dental floss, mouthwash and altered tooth brushing frequency. **Conclusions:** COVID-19-related restrictions had an unequal impact on oral health and dietary behaviors in the studied population, highlighting the need for targeted public health strategies to mitigate the effects of such disruptions on vulnerable groups.

Keywords: COVID-19; oral health; oral health habits; dietary habits; pandemic; COVID restrictions

1. Introduction

In 2020, the World Health Organization (WHO) declared COVID-19 a pandemic [1]. The uncertainty regarding the transmission of the coronavirus and concerns about its spread led health authorities worldwide to suspend certain clinical practices, including dentistry [2]. This pandemic response changed how dental care was delivered. Many dental offices and healthcare institutions, adapting to social isolation measures new treatment protocols. During this period, they could only provide urgent and emergency care [3,4].

The COVID-19 pandemic changed daily routines and eating habits worldwide. Remote work, more reliance on home-delivered fast food, and delayed dental visits have raised the risk of oral health problems [5].

As a result, patient care underwent significant changes, with uncertain consequences for oral hygiene and oral health complications [6,7]. In this context, dental clinics play a vital role in reinforcing proper oral hygiene practices. Routine check-ups allow clinics to teach patients about

effective brushing and flossing techniques that are often overlooked in daily routines. This education helps reduce the negative impacts of limited access to dental care [7].

The pandemic, especially during the periods of lockdown, significantly affected emotional well-being of many people [5]. People frequently turn to unhealthy activities as coping techniques while under stress [8,9]. Spending extensive periods at home during lockdown, often accompanied by stress and boredom, led people to smoke more frequently [10,11] and increase their intake of meals, snacks, and comfort foods—typically high in sugar [12–15]. On the other hand, the additional time available at home should help individuals to devote greater attention and care to their oral hygiene routines, potentially benefiting their oral health, even if this were not verified.

Thus, a significant shift in dietary habits can be observed, characterized by increased consumption of sugary foods and a decline in oral hygiene practices. These behavioral changes may contribute to a higher incidence of oral health issues, including an increased prevalence of dental caries [16].

Nevertheless, despite this context, the impact of the COVID-19 pandemic on oral health habits remains poorly explored. Therefore, we conducted a retrospective analysis of a sample of first-time patients attending a reference dental clinic at a Portuguese university, aiming to understand the effects of pandemic-related restrictions on their oral health and dietary habits. The null hypothesis (H0) tested in this study is that the restrictions imposed during the COVID-19 pandemic had no significant impact on oral health or dietary behaviors.

2. Materials and Methods

This study adhered to the STROBE guidelines for the reporting of observational studies in epidemiology [17] and complied with the ethical principles outlined in the Declaration of Helsinki (1975), last revised in 2024. Ethical approval was granted by the Institutional Review Board (or Ethics Committee) of Egas Moniz (ID no. 898, issued on 24 September 2020). During the initial appointment, all participants provided written informed consent.

2.1. Study Setting and Participants

This study was designed as a retrospective analysis of responses obtained from a questionnaire filled out by new patients during their first consultation, using a comprehensive database of patients who attended the clinic between June 2019 and June 2021. The questionnaire followed the guidelines set out in the World Health Organization's (WHO) Oral Health Surveys: Basic Methods (5th Edition).

The initial questionnaire collected essential demographic data, such as age, sex, educational level, employment status, medical history, medication use, smoking habits, and oral hygiene practices. Inclusion criteria require participants to be aged 18 years or older and provide written informed consent. Total edentulism was an exclusion criterion.

Participants were divided into two distinct groups based on the period during which they completed the questionnaire: Group 1 (BCR) – before COVID-19 restrictions (June 2019 to early March 2020), and Group 2 (ACR) – after COVID-19 restrictions (May 2020 to June 2021).

2.2. Dependent Variables

Oral hygiene habits were assessed based on the frequency of tooth brushing (2–3 times daily, once per day, 2–6 times per week, or never), the choice between a manual and an electric toothbrush, as well as the use of dental floss and mouthwash.

Additionally, dietary habits were examined, including the consumption of fresh fruit, biscuits, cakes, sweets or candies, lemonade or other soft drinks, coffee with sugar, and tea with sugar. The frequency of consumption was categorized as several times a day, daily, several times a week, once a week, several times a month, or rarely/never.

2.3. Independent Variables

Sociodemographic data was collected through a self-administered questionnaire completed before the clinical assessment to minimize potential response bias.

The independent variables included key indicators related to health determinants and sociodemographic characteristics, specifically age, gender, educational attainment, smoking habits, and body mass index (BMI). Gender was categorized as male or female. Age was recorded as a continuous variable (in years) and later classified into four categories: 18–24, 25–44, 45–64, and ≥65 years. Educational attainment was categorized following the guidelines provided by the International Standard Classification of Education (ISCED, updated in 2011). This classification methodology aligns with previous studies evaluating similar variables [18–20].

2.4. Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics version 28.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were computed to summarize demographic and clinical data. Inferential analysis was performed using independent samples t-tests to evaluate differences between the two groups (before and after COVID-19 restrictions) regarding various variables. Statistical significance was set at a p-value lower than 0.05 ($p < 0.05$).

3. Results

3.1. Participants inclusion and characteristics

Out of a total of 3,469 incoming patients, 3,380 (97.4%) met the eligibility criteria, whereas 89 individuals were excluded from the study. Reasons for exclusion included being under 18 years of age ($n=44$; 1.3%) or being edentulous ($n=45$; 1.3%) (Figure 1)

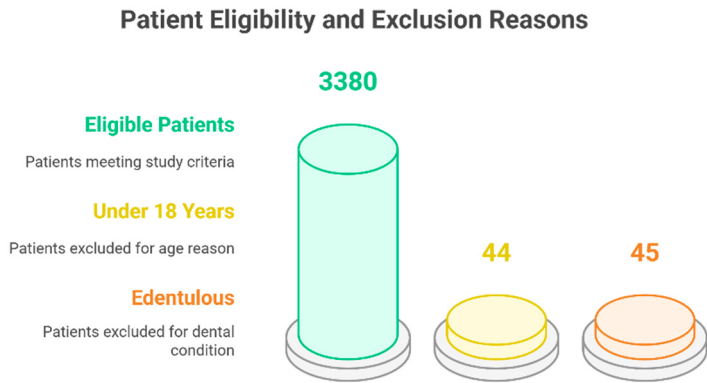


Figure 1. Participants inclusion.

Table 1 provides a detailed sociodemographic, health, and behavioral characterization of 3,380 participants, categorized into two distinct groups: pre-lockdown ($n = 2,278$) and post-lockdown ($n = 1,102$). Overall, females represented 59.4% of participants, decreasing slightly from 60.1% pre-lockdown to 56.8% post-lockdown. Conversely, males accounted for 40.6%, showing an increase from 39.9% pre-lockdown to 43.2% post-lockdown.

The mean age of participants was 43.21 years, with a minor decline from 43.36 years pre-lockdown to 42.90 years post-lockdown. Age distribution revealed that 21.3% were in the 18–24 years category, 32.4% were aged 25–44 years, 32.2% belonged to the 45–64 years group, and 14.2% were 65 years or older.

Regarding education levels, participants without formal education comprised 22.4%, showing a reduction from 24.1% pre-lockdown to 18.7% post-lockdown. Elementary education was reported by

37.4%, slightly decreasing from 37.7% pre-lockdown to 36.8% post-lockdown. Middle-level education was indicated by 26.9% of participants overall. Higher education notably increased from 0.7% pre-lockdown to 8.7% post-lockdown, with an overall percentage of 3.3%.

In terms of Body Mass Index (BMI), 3.6% of participants had a BMI below 18.5 kg/m². The majority (46.1%) had a BMI within the normal range (18.5–24.9 kg/m²), increasing from 44.5% pre-lockdown to 49.5% post-lockdown. Those classified as overweight (25.0–29.9 kg/m²) represented 34.1%, with minimal variation between periods. Participants classified with obesity (BMI ≥ 30.0 kg/m²) accounted for 16.2% overall, decreasing from 17.3% pre-lockdown to 14.0% post-lockdown.

Lastly, 79.2% of the participants reported being non-smokers. However, there was a notable increase in active smokers from 18.0% pre-lockdown to 26.6% post-lockdown.

Table 1. Sociodemographic, health, and behavior characterization of the participants (n = 3,380).

Variable	Total (n = 3,380)	Pre-lockdown (n =2,278)	Post-lockdown (n=1,102)
Sex, % (n)			
Female	59.4 (2,007)	60.1 (1,369)	56.8 (476)
Male	40.6 (1,373)	39.9 (909)	43.2 (362)
Age, mean	43.21	43.36	42.90
Age interval (years), % (n)			
18-24	21.3 (719)	21.2 (484)	21.3 (235)
25-44	32.4 (1,094)	32.3 (736)	32.5 (358)
45-64	32.2 (1,088)	31.9 (727)	32.8 (361)
≥65	14.2 (479)	14.5 (331)	13.4 (148)
Education, % (n)			
No studies	22.4 (756)	24.1 (550)	18.7 (206)
Elementary	37.4 (1,265)	37.7 (859)	36.8 (406)
Middle	26.9 (1,247)	37.4 (853)	35.8 (394)
Higher	3.3 (112)	0.7 (16)	8.7 (96)
BMI (Kg/m²) % (n)			
< 18,5	3.6 (120)	3.8 (86)	3.1 (34)
18.5-24.9	46.1 (1,558)	44.5 (1,013)	49.5 (545)
25.0-29.9	34.1 (1,153)	34.4 (784)	33.5 (369)
≥ 30.0	16.2 (549)	17.3 (35)	14.0 (154)
Active Smoker % (n)			
No	79.2 (2,678)	82.0 (1,869)	73.4 (809)
Yes	20.8 (702)	18.0 (409)	26.6 (293)

Abbreviations: BMI—Body Mass Index; n—number of participants.

Table 2 summarizes oral hygiene practices of the 3,380 participants, divided into pre-lockdown (n = 2,278) and post-lockdown (n = 1,102) groups. The majority (88.6%) of participants used manual toothbrushes, with minimal variation between periods (88.5% pre-lockdown vs. 88.6% post-lockdown). Electric toothbrush usage was relatively low, representing 10.9% overall, with a slight increase from 10.8% pre-lockdown to 11.1% post-lockdown.

Regarding tooth brushing frequency, 75.6% brushed their teeth 2–3 times daily overall, although this percentage significantly decreased from 81.2% pre-lockdown to 64.2% post-lockdown. Participants brushing once daily accounted for 15.0%, slightly declining from 15.5% pre-lockdown to 14.1% post-lockdown. Notably, those brushing 2–6 times weekly increased substantially from 1.9% pre-lockdown to 18.5% post-lockdown, with an overall average of 7.3%. Participants who never brushed their teeth constituted 2.1%, rising from 1.5% pre-lockdown to 3.2% post-lockdown.

Dental floss was not commonly used, with 65.8% of participants reporting no flossing, increasing from 62.0% pre-lockdown to 73.7% post-lockdown. Correspondingly, dental floss use decreased from 38.0% pre-lockdown to 26.3% post-lockdown, with an overall usage of 34.2%.

Mouthwash use was reported by 43.1% of participants overall, with a decrease from 44.5% pre-lockdown to 40.1% post-lockdown. Conversely, those not using mouthwash increased slightly from 55.5% pre-lockdown to 59.9% post-lockdown, totaling 56.9% overall.

Table 2. Oral health care and self-reported perception about oral health condition descriptive data (n = 3,380).

Variable	Total (n = 3,380)	Pre-lockdown (n =2,278)	Post-lockdown (n=1,102)
Type of toothbrush, % (n)			
Manual	88.6 (2,993)	88.5 (2,017)	88.6 (976)
Electric	10.9 (368)	10.8 (246)	11.1 (122)
Toothbrush frequency % (n)			
2–3 times/daily	75.6 (2,555)	81.2 (1,847)	64.2 (708)
1 time/daily	15.0 (507)	15.5 (352)	14.1 (155)
2–6 times/weekly	7.3 (248)	1.9 (44)	18.5 (204)
Never	2.1 (70)	1.5 (35)	3.2 (35)
Dental Floss usage, % (n)			
No	65.8 (2,225)	62.0 (1,413)	73.7 (812)
Yes	34.2 (1,155)	38.0 (865)	26.3 (290)
Mouth wash usage, % (n)			
No	56.9 (1,924)	55.5 (1,264)	59.9 (660)
Yes	43.1 (1,456)	44.5 (1,014)	40.1 (442)

Table 3 provides descriptive data regarding the dietary habits of the 3,380 participants.

Fresh fruit consumption was frequent among participants, with 44.7% reporting consumption several times a day, increasing slightly from 43.8% pre-lockdown to 46.7% post-lockdown. Daily fruit consumption remained stable around 30.5%. A small percentage (3.8%) seldom or never consumed fresh fruit.

Regarding biscuits and cakes, 44.1% of participants reported weekly consumption, with little variation between periods. Daily consumption decreased slightly from 18.8% pre-lockdown to 15.6% post-lockdown. Conversely, those seldom or never consuming biscuits and cakes increased from 26.9% pre-lockdown to 29.7% post-lockdown.

Daily honey consumption showed a small increase from 7.0% pre-lockdown to 9.1% post-lockdown and once a week consumption increased from 19.4% pre-lockdown to 21.1% post-lockdown.

Sweets or candies had weekly consumption reported by 44.1% of participants overall, increasing slightly post-lockdown (45.6%) compared to pre-lockdown (43.4%). Daily intake decreased from 13.2% pre-lockdown to 12.3% post-lockdown, while occasional consumption (several times a month) slightly increased post-lockdown.

The majority (54.6%) of participants reported seldom or never consumed lemonade or soft drinks, with little variation between pre-lockdown (54.3%) and post-lockdown (55.1%). Daily consumption decreased from 10.2% pre-lockdown to 8.5% post-lockdown.

78.1% of participants rarely or never added sugar to their tea. Regular tea consumption (daily or several times daily) was stable at around 9.8% overall, with minimal variation between the two periods.

Coffee with sugar was consumed several times a day by 21.0% of participants overall, decreasing from 22.5% pre-lockdown to 18.1% post-lockdown. Notably, the percentage of participants who seldom or never drank coffee with sugar decreased from 54.0% pre-lockdown to 47.7% post-

lockdown. Additionally, there was a substantial increase in missing or non-responses post-lockdown (16.2%).

Table 3. Descriptive data on dietary habits consumption (n = 3,380).

Variable	Total (n = 3,380)	Pre-lockdown (n =2,278)	Post-lockdown (n=1,102)
Fresh fruit % (n)			
Several times a day	44.7 (1,512)	43.8 (997)	46.7 (515)
Every day	30.5 (1,031)	30.4 (693)	30.7 (338)
Once a week	18.3 (618)	19.1 (435)	16.6 (183)
Several times a month	2.7 (90)	2.7 (61)	2.6 (29)
Seldom/never	3.8 (129)	4.0 (92)	3.4 (37)
Biscuits and cakes % (n)			
Not know/not answer	0.1 (3)	0 (0)	0.3 (3)
Several times a day	6.3 (213)	5.9 (134)	7.2 (79)
Every day	17.8 (600)	18.8 (428)	15.6 (172)
Once a week	44.1 (1,490)	44.2 (1,007)	43.8 (483)
Several times a month	4.0 (135)	4.3 (97)	3.4 (38)
Seldom/never	27.8 (939)	26.9 (612)	29.7 (327)
Jam or Honey % (n)			
Not know/not answer	0.1 (3)	0 (0)	0.3 (3)
Several times a day	1.1 (37)	1.2 (28)	0.8 (9)
Every day	7.7 (260)	7.0 (160)	9.1 (100)
Once a week	19.9 (673)	19.4 (441)	21.1 (232)
Several times a month	2.0 (67)	2.0 (46)	1.9 (21)
Seldom/never	69.2 (2,340)	70.4 (1,603)	66.9 (737)
Sweets/candies, % (n)			
Not know/not answer	0.1 (2)	0 (0)	0.2 (2)
Several times a day	5.6 (190)	5.4 (122)	6.2 (68)
Every day	12.9 (436)	13.2 (300)	12.3 (136)
Once a week	44.1 (1,490)	43.4 (988)	45.6 (502)
Several times a month	3.6 (123)	3.5 (79)	4.0 (44)
Seldom/never	33.7 (1,139)	34.6 (789)	31.8 (350)
Lemonade or soft drinks, % (n)			
Not know/not answer	0.1 (3)	0 (0)	0.3 (3)
Several times a day	6.4 (216)	6.2 (141)	6.8 (75)
Every day	9.7 (327)	10.2 (233)	8.5 (94)
Once a week	26.0 (878)	25.9 (591)	26.0 (287)
Several times a month	3.3 (111)	3.3 (75)	3.3 (36)
Seldom/never	54.6 (1,845)	54.3 (1,238)	55.1 (607)
Tea with sugar, % (n)			
Not know/not answer	0.2 (6)	0 (0)	0.35 (6)
Several times a day	2.8 (95)	2.8 (64)	2.8 (31)
Every day	7.0 (237)	7.1 (161)	6.9 (76)
Once a week	10.4 (352)	10.7 (244)	9.8 (108)
Several times a month	1.5 (51)	1.2 (27)	2.2 (24)
Seldom/never	78.1 (2,639)	78.2 (1,782)	77.8 (857)
Coffee with sugar, % (n)			
Not know/not answer	5.3 (178)	0 (0)	16.2 (178)
Several times a day	21.0 (711)	22.5 (512)	18.1 (199)
Every day	15.2 (513)	16.3 (372)	12.8 (141)
Once a week	5.3 (180)	6.0 (136)	4.0 (44)
Several times a month	1.3 (43)	1.3 (29)	1.3 (14)
Seldom/never	51.9 (1,755)	54.0 (1,229)	47.7 (526)

Table 4 clearly summarizes the results of independent samples t-tests comparing oral health and dietary habits between pre-lockdown (n = 2,278) and post-lockdown (n = 1,102) groups.

Table 4. Results of independent samples t-tests comparing oral health and dietary habits before (n = 2,278) and after lockdown (n = 1,102). Total n = 3,380.

Variable	Mean (Pre- lockdown)	Mean (Post- lockdown)	p-value	Significant Difference
BMI	1.65	1.58	0.007	Yes
Active smoker	0.18	0.27	<0.001	Yes
Gum bleeding	0.39	0.48	0.367	No
Dental mobility	0.26	0.24	0.167	No
Fresh fruit consumption	2.32	2.24	0.076	No
Biscuits	3.90	4.01	0.152	No
Honey/Jam	5.19	5.06	0.013	Yes
Candy chewing	5.39	5.46	0.199	No
Sweets	4.23	4.17	0.199	No
Soft drinks	4.69	4.73	0.247	No
Tea with sugar	5.31	5.29	0.772	No
Coffee with sugar	4.15	3.58	<0.001	Yes
Manual toothbrush	0.89	0.89	0.984	No
Electric toothbrush	0.11	0.11	0.406	No
Dental floss usage	0.38	0.26	<0.001	Yes
Interdental brush	0.08	0.06	0.812	No
Mouthwash usage	0.45	0.40	0.015	Yes
Tooth brushing frequency	0.24	0.62	<0.001	Yes
Teeth self-perception	3.65	3.42	0.713	No
Gum self-perception	3.46	3.16	0.422	No

Significant differences ($p < 0.05$) are observed in BMI, active smoking, honey/jam consumption, coffee with sugar consumption, dental floss usage, mouthwash usage, and tooth brushing frequency, indicating notable changes in these behaviors post-lockdown.

4. Discussion

This retrospective study assessed oral health habits and behaviors in a Portuguese adult population using self-reported questionnaires completed during initial dental consultations. The main goal was to evaluate how oral health habits were affected by the COVID-19-induced lockdown by comparing self-reported practices and attitudes before and after this period across various demographic and behavioral factors.

During the COVID-19 pandemic, restrictive policies such as lockdowns, social distancing, and isolation significantly impacted daily routines, mental health, economic stability, and lifestyle habits, potentially influencing smoking behaviors and patterns among individuals [21].

The implementation of lockdown measures significantly impacted lifestyle behaviors, including smoking habits. Evidence from recent studies indicates that social isolation and psychological stress associated with home confinement led to increased tobacco consumption [21–23]. In Italy, a web-based cross-sectional study conducted during the lockdown revealed that approximately 30% of smokers increased their cigarette consumption by an average of 5.6 cigarettes per day, while a small proportion (0.6%) of former smokers resumed smoking [22]. This shift towards increased smoking aligns with a systematic review and meta-analysis showing that, despite varied individual responses, a considerable number of smokers globally reported heightened tobacco use during the pandemic period [23].

Furthermore, the COVID-19 lockdown conditions not only increased smoking frequency among existing smokers but also influenced smoking initiation, particularly among vulnerable groups. A cross-sectional study in Jordan documented that 22.4% of smokers started smoking during the year

of the pandemic lockdown, with young adults and females significantly more likely to begin smoking in response to the stress factors related to COVID-19 restrictions [21]. Similarly, in Portugal, individuals experiencing sustained high levels of stress, anxiety, and depression during lockdown were more likely to be smokers, suggesting tobacco use as a coping mechanism during pandemic-related restrictions [24]. The pandemic thus exacerbated unhealthy lifestyle choices, highlighting the critical need for targeted public health interventions to address increased tobacco use resulting from pandemic-related stress and social isolation.

Despite the observed mean reduction in honey consumption from the pre-lockdown to the post-lockdown group in our data, recent literature reports contrasting findings. Studies suggest that the COVID-19 pandemic has led to an increased interest in honey consumption, particularly organic honey, due to heightened consumer awareness regarding health, food safety, and sustainability [25,26]. Consumers viewed honey as a genuine, natural, and health-promoting product, integrating it more frequently into their diets to support immune function and overall well-being during and following the pandemic period. Thus, while our observations highlight a decline, existing research underscores continued and potentially enhanced appeal of honey as a beneficial food in the context of COVID-19 [27].

Our findings indicate a decrease in coffee consumption, particularly coffee with sugar, after the COVID-19 pandemic restrictions. However, other studies have shown different trends. Some research suggests that coffee consumption increased during the pandemic, possibly due to changes in daily routines and higher stress levels from social isolation [28–30]. In Portugal, the COVID-19 lockdown led 8.7% of people to report an increased need for stimulant drinks, primarily coffee, suggesting its role as a coping strategy in stressful times [31]. In contrast, other authors found that although spending on coffee declined, the daily amount consumed slightly increased [30]. These contrasting findings highlight the complexity of consumption behavior shifts caused by the pandemic, underscoring the importance of considering broader psychosocial and economic factors when interpreting changes in dietary habits.

Regarding oral hygiene practices, dental floss usage significantly declined by 12% ($p < 0.001$), while mouthwash usage also decreased slightly yet significantly ($p = 0.015$). However, tooth brushing frequency significantly improved (from 0.24 to 0.62, $p < 0.001$). These findings suggest varied impacts of the COVID-19 lockdown on dietary habits and oral health behaviors, reinforcing previous research highlighting the influence of the pandemic on lifestyle choices [6,32]. Similar trends were observed in other studies [33], who reported increased self-reported oral health care issues such as dental plaque accumulation and tooth discoloration due to poor oral hygiene and altered dietary patterns during the lockdown period. Other studies further supported these findings, noting that dietary habits, particularly increased consumption of sweets and snacks, negatively affected oral health during confinement [34]. Additionally, a systematic review emphasized that reduced access to routine dental care and increased stress led to decreased oral hygiene practices, further exacerbating oral health problems during the COVID-19 pandemic [35].

Strengths and Limitations

When evaluating our study, it is essential to acknowledge both its strengths and its limitations. One notable limitation is the observational nature of the study design, which does not allow for the establishment of causal relationships. Furthermore, the data were collected through a self-administered questionnaire completed by the patients themselves. This means that the responses may not fully reflect the clinical reality, as they rely on the accuracy and honesty self-reporting of the participants.

Nevertheless, the large sample size represents a major strength, enhancing the reliability and generalizability of the findings. Additionally, it is important to consider that changes in dental procedures due to the disruption of clinical activity during the COVID-19 pandemic posed further constraints to the study.

Despite these limitations, the study was conducted in accordance with internationally recognized guiding principles [17,36,37], which supports its scientific value and credibility.

5. Conclusions

Considering the results and the characteristics of the studied population, we reject the null hypothesis of this study. Our findings indicate that the restrictions imposed during the COVID-19 pandemic had an unequal impact on oral health and dietary habits within this population. Statistically significant changes were observed in oral health-related behaviors and specific dietary patterns, including an increased consumption of tobacco and intake of coffee with sugar, alongside a marked reduction in tooth brushing frequency, flossing and use of mouthwash. These results highlight the importance of developing more nuanced and targeted strategies to better understand and address disparities in oral health outcomes, particularly in the context of lifestyle disruptions brought about by the pandemic.

Author Contributions: Conceptualization, E.G., R.C., T.D., M.N.; A.J., C.S.; Methodology, E.G., R.C. and T.D.; Validation, J.J.M.; Formal analysis, E.G.; Investigation, E.G. R.C. and T.D.; Resources, E.G.; Data curation, E.G.; Writing—original draft preparation, E.G., R.C. and T.D.; Writing— Review and Editing, E.G., R.C., T.D., and J.J.M. Visualization, E.G.; Supervision, E.G. and J.J.M.; Project administration, E.G.. All authors have read and agreed to the published version of the manuscript.

Funding: This study received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and was approved by the Institutional Review Board (or Ethics Committee) of Egas Moniz (ID no. 898 on September 24, 2020).

Informed Consent Statement: Informed consent was obtained from all the subjects involved in the study.

Data Availability Statement: The entirety of the data compiled and examined throughout this study can be found within this document. Any additional queries should be directed towards the author in charge of correspondence.

Conflicts of Interest: The authors declare no conflicts of interest.

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