










COVID-19 and Self-Reported Mental Health of Dental Graduate Program Students and Faculty Members

Lilian Lopes Barbosa¹, Erick Carvalho Campos¹, Emerson Tavares de Sousa², Hugo Lemes Carlo^{1,3}, Rogério Lacerda dos Santos³, Laísa Araújo Cortinês Laxe⁴, Eliseu Aldrighi Munchow⁵, Taís de Souza Barbosa³, Fabíola Galbiatti de Carvalho^{1,3}

¹Postgraduate Program in Applied Health Sciences, Federal University of Juiz de Fora, Governador Valadares, MG, Brazil.

²Department of Dentistry, Faculty of Dentistry, Federal University of Rio Grande do Norte, Natal, RN, Brazil.

³Department of Dentistry, Federal University of Juiz de Fora, Governador Valadares, MG, Brazil.

⁴Department of Dentistry, Federal University of Juiz de Fora, Juiz de Fora, MG, Brazil.

⁵Department of Conservative Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil.

Corresponding author: Fabíola Galbiatti de Carvalho

E-mail: fabigalbi@yahoo.com.br

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ABSTRACT

Objective: To evaluate the impact of social distancing and academic circumstances on the self-reported mental health of dental professors and students of master's and doctorate programs in Brazil during pandemic.

Material and Methods: Data were collected using a self-administered questionnaires between September 2020 to January 2021 for students (n=314) and professors (n=294). The survey consisted of 42 questions related to: 1) sociodemographic characteristics; 2) circumstances during the COVID-19 pandemic; 3) academic circumstances; and 4) Brazilian version of the Depression, Anxiety and Stress Scale (DASS-21). Data were analyzed by Chi-squared statistical test and multiple logistic regression model ($\alpha=0.05$). **Results:** The students had higher levels of self-perception of DASS-21 symptoms compared to professors. Being part of the COVID-19 risk group contributed positively for professors' anxiety. The satisfaction with productivity and pressure to publish papers increased the likelihood of depression and stress for both groups. For students, not having children decreased the likelihood for depression and stress and being married increased the likelihood of DASS-21 symptoms for professors. **Conclusion:** The social isolation caused by the COVID-19 pandemic negatively affected the self-reported mental health of dental graduate program members, mainly associated with being married and in the risk group, and being under pressure to publish papers.

Keywords: Education, Dental, Graduate; Mental Health; Coronavirus Infections.

■ Introduction

The social distancing caused by the COVID-19 pandemic and the online learning format has apparently affected the mental health of undergraduate dental students [1-3]. Studies conducted before the pandemic showed that master's and doctoral students had high scores of perceived stress that can affect their quality of life [4]. However, there is a lack of information about the impact of social distancing and its outcomes among graduate students and professors affiliated to dental education programs (*i.e.*, master's and doctoral programs).

The postgraduate academic activities could trigger stress and anxiety in students and professors, because some of them were changed during social isolation period, such as the interruption of laboratory-based experiments and clinical research, leading to a significant delay in thesis defenses; delayed grant applications due to the lack of preliminary data; and pressure to outperform and publish papers [5].

Added to these factors, the work environment in the home office regime might also have contributed to increasing stress and anxiety. At home, there might be no clear separation between home and work tasks, mainly related to the care of children [6,7]. Furthermore, the confinement during the COVID-19 crisis led to behavioral disturbances in children, and significant depression levels in parents [5,6].

In Brazil, after obtaining a DDS degree, professionals can attend two types of graduate courses: *Lato Sensu* and *Stricto Sensu*. *Lato sensu* graduate courses have clinical focus for professional practice and are considered specialization courses. *Stricto Sensu* is related to master's and doctoral programs that are focused on scientific research and academic training [4]. The number of dental master's and doctorate courses in Brazil has grown considerably in the last 10 years, and the Brazilian scientific production represents one of the largest in the world [4].

Thus, the aim of this study was to assess the effects of the COVID-19 pandemic on the self-reported mental health of graduate students and professors affiliated to dental education programs in Brazil. As it was related that individuals with lower financial incomes and under 35-years old were more likely to develop mental disorders during the pandemic [8], students could probably develop a higher level of depression, anxiety and stress than professors. Thus, the hypotheses tested in our study were: 1) whether the sociodemographic characteristics, COVID-19 pandemic circumstances, and academic circumstances affected the levels of depression, anxiety, and stress on Brazilian dental graduate students and professors during the COVID-19 pandemic; 2) whether the students had higher levels of depression, anxiety, and stress than professors.

■ Material and Methods

Ethical Clearance

The present study adheres to the STROBE statement (Strengthening the Reporting of Cross-Sectional Studies) [9] and was approved by the Ethics and Human Research Committee of the Federal University of Juiz de Fora (Opinion Number 4.267.727). A term of free and informed consent was obtained from all the participants.

Study Design and Sample

This cross-sectional study was designed as a web-based survey conducted with a sample of professors and students of master's and doctorate programs at public and private Brazilian institutions. The questionnaire consisted of 42 questions related to sociodemographic characteristics, COVID-19 pandemic circumstances, academic circumstances, and a validated Brazilian version of the Depression, Anxiety and Stress Scale – (DASS-21) [10]. The exclusion criteria were students or professors who: 1) were not members of dental education

programs in Brazil, 2) were members of *lato sensu* dental programs, 3) answered the questionnaire as student and professor at the same time.

The required sample size was estimated based on the results of a national survey [11]. The total number of graduate dental members in Brazil was 8368 professors and 2129 students. The proportion of 37% was used according to the self-reported levels of anxiety found in the Hakami et al. study [12]. The level of confidence was 95% and maximum margin of error was 5%. Using the following specifications, the required sample size was found to be 297 volunteers.

Research Instruments

Questionnaire development considered a multistage process [13]:

1) Literature review: Since there is a lack of information concerning our theme, we performed a literature review to find out relevant topics that should be included in the questionnaire construction. The topics were designed according to the definitions of the objectives and the review of literature: sociodemographic characteristics of volunteers, because these variables can influence their mental health [1,2,4]; circumstances during the COVID-19 pandemic that can change the life routine and can also affect the mental health of volunteers [14,15]; academic circumstances related to research and productivity activities of target population, which can influence their stress levels [5]; and evaluation of depression, anxiety and stress levels according to a validated instrument [10].

2) Item generation and questionnaire structuring: using the information of existing questionnaires and opinions of three experts with Ph.D. in Dentistry and experience in validation of questionnaires, items related to each topic were generated. In this phase, the questionnaire consisted of a pool of 21 questions.

3) Face and content validity testing: The purposes of this phase were to analyze the clarity of the wording of the items and remove or change items that were considered confusing, redundant, or irrelevant. After structuring the questionnaire, a pre-test was applied to nine experts (eight with Ph.D. in Dentistry, being that 3 of them have experience in validation of questionnaires, and one with a Ph.D. in Biostatistics), and eight graduate students of a dental program. Specifically, they evaluated each question individually concerning the format, title, instructions, and topic, considering the clarity and/or pertinence of each question. If any question had not been clear, the question was discussed and rewritten and applied again. Two questions were rewritten in the Academic circumstances topic: i) It was included the option “*I don't consider myself productive*” for productivity question in COVID-19 pandemic; ii) The question about the number of papers published/accepted during the COVID-19 pandemic was changed to a group the number of papers (none, one, 2-4, 5-7, more than 7). Other questions were understood by 95% or more individuals in the sample.

4) Revised instrument: The final structured questionnaire consisted of 21 questions about:

- Sociodemographic characteristics (6 questions): sex (male, female), age (years: 20-29, 30-39, 40-49, 50-59, and > 60), federative unity (27 states divided into 5 regions: North, Northeast, South, Southeast, and Central-West), marital status (single, married/stable union, divorced/ separated, and widower), parenting (yes, no), number of children.

- Circumstances during COVID-19 pandemic (7 questions): social isolation (yes, no), change in the routine (yes, no), contact with sick individuals (yes, no), tested positive for COVID-19 (yes, no), belonging to a risk group (yes, no), living with someone in the risk group (yes, no), grieving the loss of someone close due to COVID-19 (yes, no).

• Academic circumstances (8 questions): receive a scholarship (yes, no), receive a grant (yes, no) – only for professors, the COVID-19 pandemic effect on the research activities (yes, no) – only for students, productivity in COVID-19 pandemic (equally, more or less productive, did not know the answer, do not consider themselves productive), satisfaction with productivity (satisfied, dissatisfied, did not know the answer), pressure to publish (yes, no), papers published/accepted during COVID-19 pandemic (none, one, 2-4, 5-7, more than 7), good and bad feelings associated with the academic activities (Good feelings: hopeful, happy, safe, and calm. Bad feelings: anxious, tired, guilty, depressive, stressed out, frustrated, impatient, powerless, indifferent, unsafe, fearful, nervous, and sad. – more than one response was accepted).

To measure and distinguish depression, anxiety, and stress symptoms (DASS), the validated version of the Depression, Anxiety and Stress Scale (DASS-21) was used [10]. This questionnaire contains 21 questions, which assess symptoms of depression (questions 16, 17, 10, 13, 21, 3, and 5), symptoms of anxiety (questions 20, 9, 19, 2, 15, 7, and 4), and symptoms of stress (questions 18, 6, 8, 12, 11, 1, and 14). In each question, a 4-point scale was used to assess the perception levels of volunteers. The rating scales were scored as follows: 0 = did not apply to me at all, 1 = applied to me to some degree or some of the time, 2 = applied to me to a considerable degree or a good part of the time, and 3 = applied to me very much or most of the time. The scores for depression, anxiety, and stress were calculated by summing the scores of the relevant items. The categories of symptoms were normal, minimum, moderated, severe, and extremely severe.

Data Collection

Self-administered questionnaires were applied using Google Forms® and posted on social media platforms: Instagram®, WhatsApp® and by e-mail. The public page of Graduate Programs in Dentistry was searched on the internet and an e-mail was sent to the coordinator of each course informing the objective of the study and asking her/him for permission to collect data from the professors and students of the respective institution. We also asked the coordinator to e-mail the questionnaires to the professors and students. Moreover, the questionnaires were sent to those whose contact information was listed on the institutional websites of the graduate program. Snowball sampling was also used as a recruitment method by media platforms.

The invitation of all social media platforms used in the study included a brief explanation of the research, the target sample, the time to answer the questionnaire (15 min) and some instructions for completing the form. The electronic survey link allowed access to the Free and Informed Consent Form to decide whether the respondent wished to participate in the survey or not. The online questionnaire was available to volunteers during a period of Brazilian social isolation (between September 2020 to January 2021). The collection was closed on January 4, 2021.

Statistical Analysis

Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) software version 23.0 (IBM SPSS Statistics for Windows, Version 23.0, Armonk, NY, USA). Statistical analysis established 0.05 as the level of significance.

The categorical dependent variables were the symptoms of depression, anxiety, and stress. These variables were classified according to the categories of symptoms as normal or affected (minimum, moderated, severe, and extremely severe). The independent variables were sex, social isolation, change of routine, infection status, contact with sick individuals, marital status, parenting, risk group, satisfaction with productivity, and pressure to publish. Dependent and independent variables were classified as dichotomous. The normality and

homogeneity of continuous variables were tested using the Shapiro-Wilk test and the Levine test, respectively. Data that did not follow the Gaussian distribution would be expressed as median and interquartile range.

The chi-squared test was used to assess differences between groups of students and professors according to DASS-21 levels, satisfaction with productivity, and pressure to publish variables. The Cronbach's alpha was calculated to measure the reliability of the DASS-21 levels.

The multiple logistic regression model was performed to discriminate explanatory variables for depression, anxiety, and stress in professors and students. Collinearity tests were used to detect redundant information among variables (all variables had a tolerance above 0.1 and a variance inflation factor lower than 10). The backward elimination method was used in the models and the 5% significance level was established. Hosmer and Lemeshow test and chi-square test were used to check the goodness of fit of the model. The predictive power of models was scored using the area under the curve (AUC) of the Receiver Operating Characteristic (ROC) curve.

■ Results

In this study, 617 volunteers answered the questionnaires, but nine of them were excluded because two participants were members of *lato sensu* dental programs, one was not a member of a graduate program in Brazil, and in the case of six participants it was not possible to define whether they were student or professor. Therefore, the data from 608 respondents were used in the final analysis: 314 students and 294 professors. Table 1 summarizes the sample characteristics of students and professors included in the study. Nearly all volunteers experienced social isolation and a change of routine during the COVID-19 pandemic. A small number of subjects tested positive or belonged to the risk group for complications due to COVID-19. Contact with sick individuals, living with someone in the risk group, and grieving the loss of someone close due to COVID-19 were frequent outcomes. Considering the academic circumstances, professors and students considered that the COVID-19 pandemic affected their academic productivity. The pressure to publish papers was quite common and both groups associated their productivity with bad feelings.

Table 1. Sample characteristics of professors and students.

Variables	Professor N (%)	Student N (%)
Sociodemographic Characteristics		
Range Age (Years)		
20-29	4 (1.0)	211 (67.0)
30-39	82 (28.0)	64 (20.0)
40-49	124 (42.0)	30 (10.0)
50-59	60 (20.0)	7 (2.0)
> 60	24 (8.0)	2 (1.0)
Sex Ratio		
Male: Female	0.76:1.00	0.28:1.00
Region of Brazil		
North	2 (1.0)	8 (3.0)
Northeast	47 (16.0)	53 (17.0)
South	61 (21.0)	58 (19.0)
Southeast	173 (59.0)	186 (59.0)
Central-West	11 (4.0)	9 (3.0)
Marital Status		
Single	52 (18.0)	205 (65.0)
Married/ Stable Union	213 (72.0)	95 (30.0)

Divorced/ Separated	27 (9.0)	14 (5.0)
Widower	2 (1.0)	0 (0.0)
Parenting		
Yes	207 (70.0)	57 (18.0)
Number of Children – Median (IQR) κ	2 (1.0)	1 (1.0)
Circumstances during Pandemic		
Social Isolation		
Yes	294 (100.0)	310 (99.0)
Change of routine		
Yes	294 (100.0)	311 (99.0)
Contact with sick individuals		
Yes	96 (33.0)	114 (36.0)
Infection status		
Tested Positive	22 (8.0)	12 (4.0)
Risk Group		
Yes	73 (25.0)	39 (12.0)
Living with someone in the risk group		
Yes	131 (45.0)	180 (57.0)
Grieving the loss of someone close due to COVID-19		
Yes	74 (25.0)	74 (24.0)
Academic Circumstances		
Scholarship		
Yes	-	200 (64.0)
Research Productivity Fellow		
Yes	47 (16.0)	-
Grant		
Yes	136 (46.0)	-
Impact of COVID-19 in the research activities		
Yes	-	255 (81.0)
Productivity in COVID-19 Pandemic η		
Equally Productive	71 (24.0)	53 (17.0)
More Productive	72 (25.0)	65 (21.0)
Less Productive	139 (47.0)	158 (50.0)
Satisfaction with Productivity μ		
Satisfied	159 (55.0)	138 (46.0)
Unsatisfied	129 (45.0)	163 (54.0)
Pressure to publish		
Yes	205 (70.0)	193 (62.0)
Papers Published/ Accepted during COVID-19 pandemic		
None	162 (52.0)	30 (10.0)
One	98 (31.0)	43 (15.0)
2-4	47 (15.0)	138 (47.0)
5-7	6 (2.0)	47 (16.0)
More than 7	1 (0.0)	36 (12.0)
Prevalence of ξ		
Good Feelings (Yes)	97 (31.0)	103 (35.0)
Bad Feelings (Yes)	279 (95.0)	261 (89.0)

*Number of children was expressed in median and interquartile range (IQR) because of the non-Gaussian distribution of data; [†]12 professors (4%) and 38 (12%) students did not know the answer or do not consider themselves productive; [‡]6 professors and 13 students did not know the answer; [§]This domain accepts the multiple-choice answer; Good feelings: hopeful, happy, safe, and calm; Bad feelings: anxious, tired, guilty, depressive, stressed out, frustrated, impatient, powerless, indifferent, unsafe, fearful, nervous, and sad.

The DASS-21 questions had excellent internal reliability ($\alpha=0.950$). The majority of students and professors had normal levels of DASS (Table 2). However, the students were significantly more affected with depression, anxiety, and stress symptoms compared with the professors. Moreover, the professors were significantly more satisfied with productivity and had more pressure to publish papers than students (Table 3).

Table 2. Self-reported levels of Depression, Anxiety, and Stress* in professors and students.

Group	Normal N (%)	Minimum N (%)	Moderated N (%)	Severe N (%)	Extremely Severe N (%)
Professors					
Depression	267 (91.0)	18 (6.0)	8 (3.0)	1 (0.0)	-
Anxiety	267 (91.0)	15 (5.0)	6 (2.0)	6 (2.0)	-
Stress	274 (93.0)	14 (5.0)	6 (2.0)	-	-
Students					
Depression	244 (78.0)	39 (12.0)	31 (10.0)	-	-
Anxiety	237 (76.0)	34 (11.0)	30 (10.0)	6 (2.0)	7 (2.0)
Stress	269 (86.0)	29 (9.0)	16 (5.0)	-	-

*Data of Depression, Anxiety and Stress Scale (DASS – 21).

Table 3. Comparisons of the DASS levels, satisfaction with productivity, and pressure to publish between professors and students.

Variables	Categories	Professors N (%)	Students N (%)	p-value
Depression	Normal	267 (91.0)	244 (78.0)	0.000*
	Affected	27 (9.0)	70 (22.0)	
Anxiety	Normal	267 (91.0)	237 (76.0)	0.000*
	Affected	27 (9.0)	77 (25.0)	
Stress	Normal	274 (93.0)	269 (86.0)	0.003*
	Affected	20 (7.0)	45 (14.0)	
Satisfaction with Productivity	Satisfied	159 (55.0)	138 (46.0)	0.023*
	Unsatisfied	129 (45.0)	163 (54.0)	
Pressure to Publish	Yes	205 (70.0)	193 (62.0)	0.032*
	No	89 (30.0)	121 (39.0)	

*Differences statistically significant by Chi-squared test ($p < 0.05$).

Table 4 provides a summary of the logistic regression data of professors and students. Except for the model of anxiety in students, the chi-square test (overall statistics), Hosmer and Lemeshow test, and AUC of ROC curve demonstrated the goodness of fit of the proposed models and their discrimination ability to predict or explain DASS. For professors, the marital status and satisfaction with productivity increased the likelihood of being depressed, anxious, and stressed. The chances of being depressed increased by 4.79 times in professors who felt pressure to publish papers when compared with professors who did not. Being part of the COVID-19 risk group contributed positively for professors' anxiety. For students, not having children decreased the likelihood for depression and stress symptoms. The satisfaction with productivity and pressure to publish papers increased the likelihood of being depressed and stressed.

Table 4. Multiple logistic regression model for self-reported Depression, Anxiety, and Stress in professors and students.

Variables	Depression						Anxiety						Stress					
	Professor			Student			Professor			Student			Professor			Student		
	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value
Marital Status (Married)	3.40	1.42-8.13	0.006	*	*	*	3.40	1.43-8.08	0.005	*	*	*	3.12	1.21-8.01	0.018	*	*	*
Parenting (No)	*	*	*	0.15	0.05-0.45	0.001	*	*	*	*	*	*	*	*	*	0.43	0.16-1.17	0.10
Risk Group (Yes)	*	*	*	*	*	*	4.08	1.63-10.2	0.003	1.73	0.81-3.70	0.155	*	*	*	*	*	*
Satisfaction with productivity (Yes)	6.98	2.29-21.3	0.001	5.11	2.61-9.58	0.000	4.28	1.61-11.4	0.004	1.84	0.11-3.18	0.029	3.47	1.20-10.0	0.022	2.50	1.20-4.93	0.013
Pressure to publish (Yes)	4.79	1.07-21.5	0.041	3.27	1.66-6.46	0.001	2.64	0.85-8.27	0.095				3.61	0.80-16.4	0.095	2.50	1.17-5.31	0.018
Overall Statistics	31.343			45.032			33.898			9.174			17.49			17.9		
Hosmer-Lemeshow test	2.238			0.432			7.367			0.758			3.139			0.535		
Nagelkerke R Square	0.23			0.24			0.23			0.03			0.15			0.09		
ROC Analysis AUC (95% CI)	0.80 (0.72-0.88)			0.76 (0.70-0.83)			0.73 (0.63-0.83)			0.57 (0.50-0.65)			0.75 (0.65-0.85)			0.66 (0.59-0.74)		

No case of residual outliers was found considering the established ± 2 standard deviations; Method: Backward conditional; Variables as sex, social isolation, change of routine, infection status and contact with seek individuals were excluded from the analysis to provide the best fit model; The interpretation of the regression analysis should consider the presence of depression, anxiety, and stress symptoms as reference; OR: Odds Ratio; ROC: Receiver Operating Characteristic Curve; AUC: Area Under the Curve; The number of valid cases for professors and students was 288 (6 missing cases) and 301 (13 missing cases).

Discussion

Students and professors of dental graduate programs had academic responsibilities that could lead to psychological pressures [4,5,16], mainly during the COVID-19 pandemic, which created a challenging scenario for education worldwide. Within this perspective, a predictive model was built according to categorical variables obtained from the answers of participants and that provided evidence to predict the likelihood of Brazilian dental graduate students and professors having depression, anxiety, and stress levels when these variables were involved. Thus, this cross-sectional study accepted the hypotheses tested and demonstrated that the COVID-19 pandemic and academic circumstances affected the self-reported levels of DASS in Brazilian dental graduate students and professors; and that the students were more affected than professors.

The COVID-19 pandemic created an environment of severe mental instability that led to individuals suffering from depression, anger, anxiety, sleep alteration, and stress [14,17] due to the fear of contracting and transmitting the disease, the prolonged stay at home, changes in the life routine, and uncertainty about the future [14,15]. Our results showed that the majority of respondents complied with social distancing and reported that it changed their daily life routine. In addition, around 25% or more of respondents were in the risk group for COVID-19, had contact with contaminated individuals, and lived with people from the risk group. These pandemic circumstances could lead to psychological changes [18,19]. In fact, the regression model used in our study found that the chance of professors being anxious increased 4.08 times for those who were part of the risk group. Kwong et al. [20] also found that individuals with risk factors for COVID-19 had higher levels of anxiety.

In the regression model used in our study, the pressure to publish papers increased the probability of the professors being depressed by 4.79 times when compared with those who did not feel pressure. Before the COVID-19 pandemic, evidence had been shown of the association of overload of academic activities with the state of physical exhaustion, psychological disorders, and poor quality of life of members of dental graduate programs [6,16]. Meira et al. [4] related that the pressure and the difficulties in publishing papers are problems experienced in dental graduate programs. During the pandemic, the pressure to publish papers may have been aggravated as a consequence of the lack of results due to interrupting research because of universities closure.

Moreover, professors and students had the self-perception of being less productive during the COVID-19 pandemic, and those who were under pressure to publish papers associated their productivity with the bad feelings outlined in Table 1. The academic performance indicators used by graduate programs, such as the number of papers published, considerably increased the occupational stress of the faculty members, but did not increase the academic output and decreased the enthusiasm for research and professional identity [21].

We also found that professors and students who were more satisfied with their academic productivity were more likely to have depression, anxiety, and stress. Probably, the satisfaction with their productivity meant that they were working to generate scientific knowledge and academic production. However, they possibly gave up leisure, family life and faced many challenges by carrying on with their work, since they associated their productivity with bad feelings. The professors were significantly more satisfied with their productivity and were under more pressure to publish papers compared with the students. As the professional rank in universities determines salary, academic status, and research resources for professors [21], they may have felt they were under more pressure in comparison with students, who had completion of their graduate course as their main goal.

Students had higher levels of self-perception of depression, anxiety, and stress when compared with professors. This result may be explained by the interruption of ongoing studies and significant delay in thesis defenses, the impossibility of performing face-to-face academic activities, the change in routine, and the lack of physical interaction among colleagues [2]. The professors had their jobs and some financial stability, while students needed scholarships to continue studying and had to endeavor to enter the job market.

During the social isolation, the face-to-face activities of schools and recreational spaces were paralyzed, and home confinement was associated with increased irritability, hyperactivity, sleep alteration, and anxiety in children, in addition to greater dependence on parents [22,23]. As the regular interactions between parents and children were affected, the emotional change of one impacted the other's behavior [6,24]. This context can explain our results that students without children had chances reduced by 85% of having depression symptoms compared with those who had children, showing that not having children decreased the likelihood for depression. Furthermore, married professors were around 3 times more likely to develop DASS compared with those who were not married. The findings of the Hakami et al. study [12] also showed that married individuals were more stressed than single persons.

The majority of professors and students in our study showed normal levels of DASS, indicating that these individuals were trying to adapt to the new routine of life. The use of technology during the COVID-19 pandemic, including virtual meetings and remote classes, could promote improved social interaction, mitigate dissatisfaction with life and encourage independence in learning [2,22].










To the best of our knowledge, the results of the present study were the first to reveal the importance of some sociodemographic characteristics, COVID-19 pandemic circumstances, and academic situations relative to depression, anxiety, and stress levels of members of graduate dental programs in Brazil. However, limitations

should be pointed out: i) the cross-sectional and self-reported survey nature of the study limited its findings, at best, to being suggestive; ii) the use of snowball sampling may result in sample bias and challenges in achieving random sampling, as participants are enlisted through referrals from their personal networks, potentially rendering the sample non-representative of the larger population; iii) the depression, anxiety, and stress data obtained do not provide a diagnosis of these psychological characteristics, but only their self-perception; and iv) no data on the self-reported mental health of professors and students were collected before the pandemic period. Thus, it was not possible to affirm whether these symptoms appeared or increased during the pandemic. Finally, our results could encourage and guide the development and implementation of programs and institutional policies to improve wellbeing and prevent mental disorders in the universities.

■ Conclusion

The social distancing, sociodemographic and academic circumstances caused by the COVID-19 pandemic negatively affected the self-reported depression, anxiety, and stress levels of professors and students of graduate dental programs. The mainly variables associated were being married and part of the COVID-19 risk group and being under pressure to publish papers.

■ Authors' Contributions

LLB		https://orcid.org/0000-0001-9728-2304	Conceptualization, Methodology, Investigation, Data Curation and Writing - Original Draft.
ECC		https://orcid.org/0000-0002-8130-5695	Methodology, Formal Analysis and Data Curation.
ETS		https://orcid.org/0000-0002-4009-8597	Methodology, Formal Analysis, Investigation, Writing - Original Draft and Writing - Review and Editing.
HLC		https://orcid.org/0000-0002-5111-7781	Methodology, Investigation and Writing - Original Draft.
RLS		https://orcid.org/0000-0002-6213-9206	Methodology, Investigation and Writing - Review and Editing.
LACL		https://orcid.org/0000-0002-1785-7903	Methodology and Investigation.
EAM		https://orcid.org/0000-0002-6925-0097	Methodology, Investigation and Writing - Original Draft.
TSB		https://orcid.org/0000-0002-3479-7789	Methodology and Investigation.
FGC		https://orcid.org/0000-0003-2510-1329	Conceptualization, Methodology, Formal Analysis, Investigation, Data Curation, Writing - Original Draft, Writing - Review and Editing and Supervision.

All authors declare that they contributed to critical review of intellectual content and approval of the final version to be published.

■ Financial Support

None.

■ Conflict of Interest

The authors declare no conflicts of interest.

■ Data Availability

The data used to support the findings of this study can be made available upon request to the corresponding author.

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