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QUALIDADE DE VIDA, ESTRESSE PERCEBIDO E FATORES ASSOCIADOS: ESTUDO ENVOLVENDO DOCENTES E DISCENTES DE PÓS-GRADUAÇÕES *STRICTO SENSU* EM ODONTOLOGIA NO BRASIL

Curitiba

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Tese apresentada ao Programa de Pós-Graduação em Odontologia, Pró-Reitoria de Pesquisa, Pós-Graduação e Inovação da Pontifícia Universidade Católica do Paraná, como parte dos requisitos para obtenção do título de Doutor em Odontologia, Área de Concentração em Clínica Odontológica Integrada (Ênfase em Ortodontia).

Orientador: Prof. Dr. Orlando Motohiro Tanaka

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SUMÁRIO

RESUMO

Introdução: O presente trabalho tem por objetivo estudar os preditores do estresse percebido e da qualidade de vida em docentes e discentes de pós-graduações *stricto sensu* em Odontologia no Brasil. **Métodos:** Este foi um estudo transversal com amostra do Brasil (n = 707 estudantes e n =348 docentes). Os dados foram coletados por meio de questionários autoaplicáveis enviados por via digital. A qualidade de vida (QV) foi avaliada por meio de instrumento multidimensional da Organização Mundial da Saúde (WHOQOL-BREF) e o estresse por meio da Escala de Estresse Percebido. As características sócio-demográficas dos participantes serviram como variáveis independentes. Os dados foram submetidos à análise de regressão linear considerando nível de significância de 5%. **Resultados:** O sexo feminino foi associado a maiores escores de estresse e menores escores de QV nos dois grupos. Houve correlação negativa entre o estresse percebido e todos os quatro domínios de QV. As variáveis independentes (sexo, idade, duração do sono, ingestão de medicamentos e tempo de lazer) contribuíram para a variação parcial do estresse percebido nos docentes (32%) e discentes (28%). O conjunto de variáveis selecionadas foi capaz de explicar parcialmente a variabilidade dos quatro domínios da QV: físico (50 e 52%), psicológico (58 e 62%), relações sociais (27 e 25%) e meio ambiente (40 e 37%) nos docentes e estudantes respectivamente. **Conclusão:** sexo (feminino) e ingestão de medicação devido ao estudo ou trabalho foram preditores para mais altos níveis de estresse percebido em docentes e estudantes. O estresse percebido e uso de medicação foram preditores de baixa qualidade de vida. As variáveis horas de sono, lazer e atividade física impactaram na diminuição do estresse e aumento da qualidade de vida.

Palavras-chave: qualidade de vida; estresse ocupacional; odontologia.

INTRODUÇÃO

Nos últimos anos tem-se demostrado notável crescimento do sistema de pós-graduação *stricto sensu* no Brasil (mestrados e doutorados), o que tem gerado aumento no quantitativo de novos pesquisadores formados bem como na produção científica, com destaque para a área da Odontologia.[1] Porém, esse avanço pode trazer um alto custo, em especial para pós-graduandos e seus orientadores, os quais sofrem elevada pressão visando a melhor qualificação dos programas, com a constante necessidade de aumento no volume e qualidade da produção científica.[2] Esta situação se torna preocupante, uma vez que indivíduos expostos à pressão no seu ambiente de trabalho estão vulneráveis ao acometimento por transtornos mentais que levam ao sofrimento mental relacionado ao trabalho e num estágio mais grave podendo levar até ao suicídio.[3, 4]

Nos últimos anos a CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) tem estabelecido critérios rigorosos para a avaliação dos cursos de pós-graduação. Por um lado, esta cobrança gera resultados positivos como a melhora na qualidade da formação de recursos humanos (mestres, doutores, docentes e pesquisadores) e o aumento na da produção científica brasileira.[5] Por outro lado, esta situação pode gerar estresse excessivo para os docentes e discentes e diminuir a qualidade de vida destes indivíduos.[6,7]

Cada vez mais os gestores em saúde estão reconhecendo que medidas de doenças por si só, são determinantes insuficientes para mensurar a condição de saúde de uma população.[8] De acordo com a Organização Mundial de Saúde, qualidade de vida é a percepção dos indivíduos da sua posição na vida, no contexto da cultura e do sistema de valores nos quais vivem e também dos seus objetivos, expectativas padrões e conceitos.[9]

Avaliações de qualidade de vida que são administradas de maneira mais fácil e que não impõem um grande fardo ao respondente são necessários para serem utilizados em grandes pesquisas epidemiológicas e estudos clínicos.[10] A necessidade de instrumentos de rápida aplicação determinou que o Grupo de Qualidade de Vida da Organização Mundial de Saúde desenvolvesse a versão abreviada do WHOQOL-100, o WHOQOL-bref. Este instrumento consta de 26 questões divididas em quatro domínios: físico, psicológico, relações sociais e meio ambiente.[8]

O WHOQOL-bref tem sido vastamente utilizado em pesquisas de diversas áreas para avaliar qualidade de vida no Brasil e em outros países incluindo estudos

na área de Odontologia.[11, 12] Estudos que exploram a qualidade de vida no âmbito educacional na área da saúde, apontam a necessidade de se discutir amplamente a situação vivida nas instituições de Ensino Superior, uma vez que o estudo, assim como o trabalho neste meio, podem influenciar no processo de saúde-doença.[13,14] Porém não há na literatura trabalhos que verificam a qualidade de vida em cursos de mestrado e doutorado de Odontologia no Brasil.

O estresse representa um processo complexo do organismo, envolvendo aspectos bioquímicos, físicos e psicológicos, que são desencadeados a partir da interpretação que o indivíduo dá aos estímulos externos e internos – os chamados estressores – causando desequilíbrio na homeostase interna que exige uma resposta de adaptação do organismo para preservação de sua integridade e da própria vida.[15, 16]

Cohen et al., (1983) desenvolveram uma escala que mensura o grau no qual os indivíduos percebem as situações como estressantes. Esta escala foi denominada Perceived Stress Scale (PSS – Escala de Estresse Percebido) apresenta 14 itens. Segundo esses autores, o estresse percebido pode ser visto como uma variável de resultado que mede o nível de estresse vivido em função de eventos estressantes, processos de enfrentamento e fatores de personalidade.[17]

A PSS é uma escala geral, que não contém questões de contextos específicas. Por este motivo ela tem sido utilizada em muitos estudos publicados em periódicos de impacto e validada em diversas culturas incluindo o Brasil.[18] Existem vantagens em se utilizar escalas objetivas como esta para fins de pesquisa, tais como identificar o risco do desenvolvimento de doenças relacionadas ao estresse e ser de aplicação fácil.[17]

Um estudo realizado no Brasil com mestrandos e doutorandos, revelou que a média do estresse da amostra total ficou acima do ponto médio da escala.[2] Outra pesquisa explorando o estresse em mestrandos da área da saúde mostrou que 40,7% dos sujeitos apresentaram estresse acentuado e houve associação entre estresse e sexo, estando as mulheres mais vulneráveis ao mesmo.[19] É muito importante que se estude o estresse não apenas dos estudantes, porém também dos professores, que da mesma forma estão expostos às pressões do meio acadêmico.[20]

Apesar da grande relevância da temática exposta, poucos trabalhos foram desenvolvidos para explorar variáveis como a qualidade de vida e o estresse percebido em cursos de mestrado e doutorado em Odontologia. Estudos como este

visam levantar discussões e criar subsídios para que sejam planejadas estratégias que possam melhorar a condição de trabalho nesta área.

OBJETIVO

O presente trabalho tem por objetivo estudar os preditores da qualidade de vida e do estresse percebido em docentes e discentes de pós-graduações *stricto sensu* em Odontologia no Brasil.

REFERENCIAS

1. Federal–MCT G. Ministério da Ciência e Tecnologia: Plano de Ação de Ciência, Tecnologia e Inovação (PACTI). 2007.
2. Faro A. Estresse e estressores na pós-graduação: estudo com mestrandos e doutorandos no Brasil. Psicologia: Teoria e Pesquisa. 2013;29(1):51-60.
3. Ceccon RF, Meneghel SN, Hesler LZ. Suicídio e trabalho: o que fazer? Ciência & Saúde Coletiva. 2012;17(8):2209-10.
4. dos Santos JD, Fillipiaki CK, Bermudes DF, Savaris CB, Rossa L, Garrastazu MD. Suicídio dos profissionais e estudantes de odontologia associado às altas taxas de síndrome de burnout–revisão de literatura. Ação Odonto. 2016(1).
5. Kuenzer AZ, Moraes MCMd. Temas e tramas na pós-graduação em educação. Educação & Sociedade. 2005;26(93).
6. Yang X, Ge C, Hu B, Chi T, Wang L. Relationship between quality of life and occupational stress among teachers. Public Health 2009;123(11):750–5.
7. Elani HW, Allison PJ, Kumar RA, Mancini L, Lambrou A, Bedos C. A systematic review of stress in dental students. J Dent Educ. 2014;78(2):226–42.
8. Skevington SM, Lotfy M, O'Connell KA. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Quality of life research: an international journal of quality of life aspects of treatment, care and rehabilitation. 2004;13(2):299-310.
9. Group W. The World Health Organization quality of life assessment (WHOQOL): position paper from the World Health Organization. Social science & medicine. 1995;41(10):1403-9.

10. Fleck MP, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, Pinzon V. Application of the Portuguese version of the abbreviated instrument of quality life WHOQOL-bref. Rev Saude Publica. 2000;34(2):178-83.
11. Wang T-F, Fang C-H, Hsiao K-J, Chou C. Effect of a comprehensive plan for periodontal disease care on oral health-related quality of life in patients with periodontal disease in Taiwan. Medicine. 2018;97(5).
12. Alves MLM, Lopes JFS, de Almeida ALPF, Neppelenbroek KH, de Oliveira TM, Soares S. Orthognathic surgery or overlay prosthesis: Quality of life in bilateral cleft lip and palate patients. Annals of maxillofacial surgery. 2017;7(2):176.
13. Andre A, Pierre GC, McAndrew M. Quality of Life Among Dental Students: A Survey Study. Journal of dental education. 2017;81(10):1164-70.
14. Lotti Garcia Á, Araújo Oliveira ER, Barros de Barros E. Qualidade de vida de professores do ensino superior na área da saúde: discurso e prática cotidiana. Cogitare Enfermagem. 2008;13(1).
15. Lipp ME, Malagris LE. O stress emocional e seu tratamento. Psicoterapias cognitivo-comportamentais: um diálogo com a psiquiatria. 2001:475-90.
16. Lipp MEN. Mecanismos neuropsicofisiológicos do stress: teoria a aplicações clínicas. Mecanismos neuropsicofisiológicos do stress: teoria a aplicações clínicas2003.
17. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of health and social behavior. 1983:385-96.
18. Luft CDB, Sanches SdO, Mazo GZ, Andrade A. Versão brasileira da Escala de Estresse Percebido: tradução e validação para idosos. Revista de Saúde Pública. 2007;41:606-15.
19. Faro Santos A, Júnior Alves A. Estresse e estratégias de enfrentamento em mestrandos de ciências da saúde. Psicologia: Reflexão e crítica. 2007;20(1).
20. de Oliveira ERA, Garcia ÁL, Gomes MJ, Bittar TO, Pereira AC. Gênero e qualidade de vida percebida- Estudo com professores da área de saúde. Cienc e Saude Coletiva 2012;17(3):741–7.

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Perceived stress and quality of life among graduate dental faculty

ABSTRACT

This study aimed to identify the predictors of perceived stress and quality of life (QoL) among graduate dental faculty. This cross-sectional study was conducted using a representative sample of 348 dental faculty members from master's and doctoral programs in Brazil. Data were collected using self-administered questionnaires between August and December 2018. QoL was assessed using the multidimensional World Health Organization Quality of Life assessment (WHOQOL-BREF). Perceived stress was assessed using the Perceived Stress Scale (PSS). Participant sociodemographic characteristics served as the independent variables. The data were subjected to linear regression analysis. Women obtained higher PSS scores and lower QoL scores ($p < 0.05$). There was a negative correlation between perceived stress and all four QoL domains. Multivariate analysis revealed that a combination of the independent variables (i.e., sex, age, sleep duration, dual employment, medication intake due to work, and leisure time) explained 32% of the variance in perceived stress. With regard to QoL, perceived stress, sleep duration, and medication intake due to work explained 50%, 58%, 27%, and 40% of the variance in the physical health, psychological, social relationships, and environment domain scores, respectively. Sex (i.e., female) and medication intake due to work predicted higher levels of perceived stress. In contrast, age, sleep duration, dual employment, and leisure time were associated with lower levels of perceived stress. Perceived stress and medication intake due to work had a negative effect on QoL, whereas sleep duration had a positive impact on QoL.

Keywords: Stress, Mental health, Quality of life, Faculty.

INTRODUCTION

Given the current dynamics of markets in different fields, which are characterized by high levels of organizational competitiveness, human resources are regarded as contributors to quality and competitive advantages in relation to organizational activities.[1] University faculty members have several responsibilities (e.g., conducting scientific research, writing papers, and teaching), because of which they shoulder an increasingly heavy burden.[2] Their high levels of stress can lead to burnout syndrome, lower their quality of life (QoL), and contribute to the development of mental disorders.[3,4]

In recent years, there has been remarkable growth within the graduate system (i.e., master's and doctoral programs). Consequently, there has been an increase in the number of new researchers and scientific publications, especially within the field of dentistry.[5] However, these advances entail a hidden cost. In particular, students and faculty members face extreme pressures to perform better and publish more articles.[2]

Health managers are becoming increasingly aware that disease measures are insufficient determinants of population health.[6] According to the World Health Organization, QoL refers to individuals' perceptions of their positions in life within the context of the culture and value systems within which they operate as well as their goals, expectations, and beliefs.[7] Past studies have assessed the mental health, perceived stress, and QoL of those who belong to the academic field.[3,8,9] Their findings suggest that mental illness is a growing problem within the domain of graduate education.[10] Among healthcare faculty members, inadequate leisure time can lead to sleep problems (which in turn can render them vulnerable to mental illnesses), burnout, and significant changes within their organizations. These factors can negatively affect their social and family relationships and, consequently, worsen their health and QoL.[11]

However, similar research studies have not been conducted among graduate dental education programs (i.e., master's and doctoral programs). Several past studies have identified the strategies that are most effective in helping dental students cope with stress.[12–14] However, limited research attention has been paid to the perceived stress levels and QoL of faculty members, especially graduate faculty members. Therefore, this study aimed to identify the predictors of perceived stress and QoL among graduate dental faculty.

METHODS

This research was a cross-sectional study developed in Brazil, which was approved by the Human Ethics and Research Committee of the Pontifical Catholic University of Paraná. Informed consent was obtained from all participants included in the study.

Sample

The target population included all faculty members who taught masters and doctoral courses in dentistry in public and private institutions across the country. The required sample size was estimated based on the results of a national survey.[15] Specifically, the total number of graduate dental faculty members in Brazil was 2,130 in 2016. Using the following specifications, the required sample size was found to be 326: 95% confidence level, maximum margin of error = 5%, and prevalence = 50%.

Data collection strategy

Self-administered questionnaires were uploaded onto a digital platform, namely, Qualtrics (Salt Lake, Utah), to collect data. An email containing the link to the survey and information about free informed consent was sent to each eligible participant. The link limited the number of responses per recipient to one. Previously, we had emailed course coordinators to formally obtain their permission to collect data from the faculty members of their respective institutions. The coordinators were informed about the objectives of the study, and they were asked to email the questionnaires to the faculty members of their respective institutions. Additionally, the questionnaires were sent to those whose contact information was listed on the institutional websites and included in published articles. These emails were individually sent to each faculty member. Data were collected between August 15 and December 15, 2018.

Data collection instruments

The Perceived Stress Scale (PSS), which has previously been translated into portuguese and validated using brazilian sample, was used to measure perceived stress.[16] This instrument consists of 14 items, each of which is rated on a 5-point Likert scale. Total scores can range from zero to 56. Seven items are negatively worded

(Factor 1: 1, 2, 3, 8, 11, 12, and 14), and the remaining seven items are positively worded (Factor 2: 4, 5, 6, 7, 9, 10, and 13). Higher scores are indicative of greater perceived stress.

The World Health Organization Quality of Life (WHOQOL-BREF) instrument assesses the QoL of adults. It consists of 26 questions, two of which measure overall health. The other 24 questions assess the following four domains: physical health, psychological, social relationships, and environment. The physical health domain includes the following items: physical pain, dependence on medical treatment, energy, mobility, sleep, activities of daily living, and work capacity. The psychological domain consists of the following items: enjoyment of life, personal beliefs, concentration, body image, self-esteem, and negative feelings. The social relationships domain comprises the following items: personal relationships, sexual activity, and support from friends. Finally, the environment domain includes the following items: security, physical environment, financial security, information availability, leisure activities, living conditions, healthcare accessibility, and transportation.

Each item is rated on a 5-point scale. Depending on the item, the corresponding response scale may assess intensity (*not at all* to *extremely*), capacity (*not at all* to *completely*), frequency (*never* to *always*), or satisfaction (*very dissatisfied* to *very satisfied* or *very poor* to *very good*). The four domain scores can range from zero to 100, and higher scores are indicative of better QoL. The brazilian version of this instrument has demonstrated strong internal consistency (Cronbach's alpha: domains = 0.77, questions = 0.91), discriminant, criterion, and concurrent validity, and test-retest reliability (correlation coefficients = 0.69–0.81).[17]

Another questionnaire, which was developed for the purposes of this study, was used to assess the sociodemographic (i.e., sex, age, marital status, location of the institution, number of children, and educational level), occupational (i.e., management position, dual employment, kind of employment bond, and number of published papers), and health characteristics (i.e., medication intake due to work, sleep duration [hours], leisure time, and physical activity) of the participants.

Statistical analysis

With regard to univariate analyses, the categorical variables were examined by computing frequencies and percentages, whereas the continuous variables were examined by computing means, medians, standard deviations, and minimum and

maximum values. The internal consistency of the questionnaire was examined by computing Cronbach's alpha coefficients. Sociodemographic differences in perceived stress and QoL were examined by conducting one-way analysis of variance (ANOVA) and Student's t-test. To further examine significant group differences (i.e., based on ANOVA results), the Tukey and Games-Howell post-hoc tests were conducted. Levene's test was conducted to assess the homogeneity of variances. When the data distribution was homogeneous, the Tukey test was conducted. When this assumption was not met, the Games-Howell test was conducted. Pearson's correlation analysis was conducted to examine the relationships between continuous independent and dependent variables (e.g., the PSS and WHOQOL-BREF scores). Significant correlates of perceived stress and QoL were included in multiple stepwise regression analysis; the exit probabilities were 0.05 and 0.10, respectively. The significance level was set as 5%. The data were analyzed using Statistical Package for the Social Sciences version 25 (IBM, Chicago) and Microsoft Excel (Microsoft Office 365).

RESULTS

The sample consisted of 348 faculty members from all parts of the country, and their representations were proportional to the distribution of faculty members throughout the country. Tables 1 and 2 present their sociodemographic characteristics.

Perceived stress

The PSS demonstrated strong internal consistency (Cronbach's alpha = 0.91). Table 1 presents the mean PSS score as well as the results of one-way ANOVA and Student's t-test, which were conducted to examine group differences in perceived stress. Sex, dual employment, medication intake due to work, leisure time, and physical activity had significant effects on perceived stress (Table 1). With regard to the continuous variables, Pearson's correlation analysis showed that perceived stress was negatively (and very weakly) correlated ($p < 0.001$) with age, number of children, sleep duration, and work experience (years). In other words, as the mean values of these variables decreased, mean PSS scores increased.

Predictors of perceived stress

The predictors of perceived stress among graduate dental faculty were identified using multivariate analysis, and the results are summarized in Table 4. The variables that were retained in the final model explained 32% of the variance in the PSS scores ($R^2 = 0.32$). The standardized coefficient (β) indicates the extent to which changes in the predictors resulted in increases (i.e., positive value) or decreases (i.e., negative value) in the PSS scores.

QoL

All the four WHOQOL-BREF subscales demonstrated strong internal consistency (physical health = 0.81, psychological = 0.79, social relationships = 0.69, and environment = 0.74).

Table 3 presents the means for the four QoL domains as well as the results of one-way ANOVA and Student's t-test, which were conducted to examine sociodemographic differences in the four QoL domains. Women obtained significantly lower scores on the physical health, psychological, and environment domains. Those with fewer years of work experience obtained lower scores on the psychological and environment domains. A positive association emerged between scores on the psychological domain and dual employment. Medication intake due to work, leisure time, and physical activity had a significant effect on all the four QoL domains.

Pearson's correlation analysis revealed that age, number of children, and sleep duration were positively (but very weakly) correlated ($p < 0.001$) with all the four domains scores (exception: age and social relationships). The PSS scores were negatively correlated with all the four QoL domain scores (psychological: strong, others: moderate).

Predictors of QoL

Multivariate analysis revealed that a combination of selected variables partially explained the variance (R^2) in the four domain scores (physical health = 50%, psychological = 58%, social relationships = 27%, and environment = 40%). These results are presented in Table 5. The standardized coefficient (β) indicates the extent to which the independent variables had an effect on each QoL domain.

Table 1 – Sociodemographic characteristics of the participants and group differences in mean scores on the Perceived Stress Scale.

Variables	n	%	PSS	SD	*P*
Sex					
Male	169	48.6	21.4	8.25	
Female	179	51.4	26.09	7.39	0.000*
Marital status					
Not married	60	17.2	24.53	8.39	
Married	263	75.6	23.83	8.04	
Divorced	21	6.0	22.04	8.94	
Widower	4	1.1	16.75	4.11	0.217
Location of the institution					
North	8	2.3	24.5	2.27	
Northeast	55	15.8	22.72	1.14	
South	93	26.7	24.05	0.69	
Southeast	181	52	23.96	0.65	
Midwest	11	3.2	24.36	3.07	0.876
Educational level					
Master's degree	4	1.1	18.25	2.21	
PhD for less than 5 years	54	15.5	25.59	8.21	
PhD for more than 5 years	290	83.3	23.53	8.15	0.093
Management position					
Yes	167	48	23.3	7.76	
No	181	52	24.25	8.52	0.282
kind of employment bond					
Collaborating	39	11.3	23.47	1.38	
Permanent	298	86.4	23.86	8.06	
Visitor	8	2.3	21.87	11.15	0.771
Dual employment					
Yes	54	15.5	21.53	8.96	
No	294	84.5	24.21	7.95	0.027*
Program					
Public	240	69.2	23.91	8.46	
Private	107	30.8	23.51	7.45	0.673

Number of published papers					
None	7	2.0	19.33	4.84	
One	18	5.2	25.66	8.81	
2 to 5	169	48.7	24.33	8.18	
6 to 10	88	25.4	23.26	8.09	
More than 10	55	15.9	23.65	7.66	
More than 20	10	2.9	18.2	9.82	0.128
Medication intake due to work					
Yes	99	28.4	28.27 **a**	7.67	
No	246	70.5	21.95 **b**	7.68	
Do not remember	4	1.1	26.5 **ab**	5.06	0.000*
Leisure time					
Yes	172	49.4	21.52	7.89	
No	176	50.6	26.06	7.77	0.000*
Physical activity					
Yes	188	53.9	22.2	7.93	
No	161	46.1	25.65	8.04	0.000*

(SD) Standard deviation; (P) p value; (PSS) perceived stress scale mean score
Different letters mean statistical significance
*Statistically significant

Table 2 – Sociodemographic characteristics of the participants.

Continuous variables	Mean	SD	Median	Minimum	Maximum
Age (years)	44.9	9.5	43	27	71
Number of children	1.1	0.9	1	0	4
Work experience (years)	9.8	7.3	8	0	43
Graduate weekly workload (hours)	17.2	10	16	0	50
Undergraduate weekly workload (hours)	15.2	8.3	14	0	56
Sleep duration (hours)	6.6	0.9	7	4	9

(SD) standard deviation

Table 3 – Mean score values for the four domains of quality of life and results stratified by sociodemographic characteristics.

	Physical Health		**Psychological**		**Social Relationships**		**Environment**	
	Mean (SD)	*P*	Mean (SD)	*P*	Mean (SD)	*P*	Mean (SD)	*P*
All subjects	72.2 (15.1)		70.1 (13.6)		66.8 (17.4)		68.7 (11.9)	
Sex								
Male	74.6 (14.66)		73.1 (13.1)		67.9 (16.6)		70.6 (11.4)	
Female	69.9 (15.3)	0.004*	67.2 (13.6)	0,000*	65.6 (18.0)	0.217	66.7 (12.0)	0.002*
Marital status								
Not married	71.2 (15.3)		67.5 (14.2)		66.8 (17.8)		65.7 (12.4) **a**	
Married	72.1 (15.1)		70.3 (13.6)		66.4 (17.3)		69.0 (11.6) **ab**	
Divorced	75.3 (16.2)		74.0 (13.2)		71.0 (17.7)		71.1 (13.7) **ab**	
Widower	83.0 (7.9)	0.367	75.0 (6.8)	0.225	75.0 (6.8)	0.526	81.2 (5.7) **b**	0.027*
Location of the institution								
North	73.6 (3.5)		71.8 (2.8)		62.5 (6.0)		64.0 (2.9)	
Northeast	72.5 (1.8)		72.2 (1.6)		66.0 (2.4)		69.9 (1.6)	
South	72.9 (1.6)		68.9 (1.3)		64.8 (1.9)		68.6 (1.1)	
Southeast	71.6 (1.1)		69.8 (1.0)		68.2 (1.2)		68.6 (0.9)	
Midwest	73.0 (5.4)	0.967	73.1 (4.8)	0.596	65.9 (5.8)	0.551	67.3 (4.4)	0.747
Educational level								
Master's degree	83.9 (16.6)		77.0 (5.3) **ab**		68.7 (7.9)		75 (3.6) **ab**	
PhD for less than 5 years	69.3 (16.4)		65.8 (13.4) **a**		63.5 (16.9)		64.6 (11.6) **a**	

PhD for more than 5 years	72.6 (14.8)	0.102	70.8 (13.6) **b**	0.028*	67.3 (17.5)	0.336	69.3 (11.9) **b**	0.015*
Management position								
Yes	73.1 (14.1)		71.2 (13.2)		66.7 (17.2)		68.8 (11.6)	
No	71.3 (16.0)	0.283	69.0 (14.0)	0.137	66.8 (17.6)	0.984	68.6 (12.2)	0.903
Kind of employment bond								
Collaborating	70.7 (15.1)		67.5 (15.0)		65.5 (13.2)		68 (11.9)	
Permanent	72.3 (15.0)		70.4 (13.4)		66.8 (18.1)		68.7 (12.0)	
Visitor	73.6 (22.4)	0.798	72.9 (17.8)	0.395	70.8 (10.9)	0.737	71.4 (11.3)	0.757
Dual employment								
Yes	75.2 (14.7)		73.7 (14.2)		66.3 (17.0)		69.3 (14.0)	
No	71.6 (15.2)	0.111	69.4 (13.5)	0.033*	66.8 (17.5)	0.844	68.6 (11.5)	0.659
Program								
Public	71.4 (15.6)		69.7 (14.1)		65.9 (18.2)		68.8 (12.3)	
Private	74.1 (14.0)	0.120	71.0 (12.6)	0.435	68.7 (17.4)	0.157	68.6 (11.2)	0.902
Number of published papers								
None	69.8 (21.9)		67.8 (14.7)		67.8 (15.5)		71.0 (13.9)	
One	72.0 (14.6)		72.9 (12.6)		68.5 (20.3)		67.0 (14.3)	
2 to 5	70.0 (16.5)		68.6 (14.6)		67.0 (17.3)		67.8 (11.4)	
6 to 10	73.6 (12.7)		70.3 (13.1)		66.0 (17.4)		68.6 (11.9)	
More than 10	76.4 (13.1)		72.4 (11.6)		65.0 (16.3)		70.8 (11.9)	
More than 20	79.2 (11.0)	0.057	78.7 (10.8)	0.136	78.3 (18.5)	0.376	75.6 (13.2)	0.275
Medication intake due to work								

Yes	63.0 (16.4) **a**		63.4 (14.3) **a**		59.2 (18.3) **a**		64.1 (13.0) **a**	
No	76.0 (12.8) **b**		72.8 (12.5) **b**		69.9 (16.0) **b**		70.6 (10.9) **b**	
Do not remember	66.0 (19.4) **ab**	0,000*	67.7 (6.2) **ab**	0,000*	58.3 (18.0) **ab**	0,000*	60.1 (3.9) **ab**	0,000*
Leisure time								
Yes	75.5 (14.9)		73.7 (12.1)		70.0 (15.9)		71.3 (11.9)	
No	69.0 (14.7)	0,000*	66.5 (14.2)	0,000*	63.5 (18.2)	0,000*	66.1 (11.4)	0,000*
Physical activity								
Yes	75.7 (14.1)		73.0 (12.7)		69.3 (16)		71.1 (11.5)	
No	68.2 (15.2)	0,000*	66.7 (13.9)	0,000*	63.8 (18.4)	0.003*	65.8 (11.8)	0,000*

(SD) Standard deviation; (P) p value; Different letters mean statistical significance; * Statistically significant

Table 4 – Predictors of Perceived Stress.

Independent variables	R^2	**β**	*P*
	0.32		
α=constant		41.7	0.000
Sex			
Male		0	-
Female		3.4	0.000
Age		-0.2	0.000
Sleep duration		-1.8	0.000
Dual employment			
Yes		-2.5	0.019
No		0	-
Medication intake due to work			
Yes		5.1	0.000
No		0	-
Leisure time			
Yes		-2.5	0.001
No		0	-

(P) p value; (β) standardized coefficient of each independent variable by regression.
All results were statistically significant at $p<0.05$

Table 5 – Predictors of the four domains of Quality of Life.

	Physical Health			**Psychological**			**Social Relationships**			**Environment**		
	R^2	**β**	*P*	R^2	**β**	*P*	R^2	**β**	*P*	R^2	**β**	*P*
	0.50			0.58			0.27			0.40		
α=constant		74.3	0.000		100.2	0.000		91.8	0.000		80.5	0.000
PSS		-0.9	0.000		-1.2	0.000		-1.0	0.000		-0.9	0.000
Sleep duration		3.4	0.000		-	-		-	-		1.3	0.018
Medication intake due to work												
Yes		-7.3	0.000		-2.4	0.038		-5.0	0.009		-	-
No		0	-		0	-		0	-		-	-

(P) p value; (PSS) perceived stress scale mean score; (β) standardized coefficient of each independent variable by regression.
All results were statistically significant at $p<0.05$

DISCUSSION

The findings of this national survey serve as a starting point for further discussion on the working conditions and QoL of graduate dental faculty members. Our findings suggest that sleep duration and medication intake due to work are important predictors of both perceived stress and QoL.

Our participants primarily taught graduate courses, but they were also involved in the undergraduate program. In general, professionals within the field of dentistry who are involved in graduate educational programs (i.e., master's and doctoral degree levels) also take on responsibilities that pertain to the undergraduate program. This is a characteristic feature of this population. Nevertheless, differences in the workload that involvement in undergraduate and graduate programs entails did not affect our findings regarding perceived stress and QoL. A national survey conducted in Australia found that a majority of the participating faculty members were involved in both teaching and research activities; in contrast, only a minority of the participants were research- or teaching-only faculty members. Those who were involved only in research activities reported greater job satisfaction and lower levels of psychological strain.[18] Because perceived stress and QoL are also related to other life domains,[3] the present findings are not entirely attributable to the occupational demands of graduate programs.

In this study, female participants obtained lower scores on the physical health, psychological, and environment domains than their male counterparts. However, when compared to the general population, both men and women obtained higher QoL scores across all domains, except social relationships.[19] Another survey conducted among healthcare and life sciences faculty members reported QoL scores that are comparable to the present results.[3] In addition, female participants obtained higher PSS scores. These findings are consistent with the literature.[3] Sex differences in psychological characteristics are important factors that merit attention because men are less susceptible to the impact of external factors.[4] In some countries (e.g., Brazil and India), women constitute a higher proportion of the population of dentists. Further, higher numbers of women attend dental schools in North America.[20] Thus, it is important to pay special attention to the women who belong to this field. Our findings suggest that devising specific strategies to reduce stress will improve the QoL of this population.

Continuous exposure to occupational stressors (i.e., high work demands and low levels of resources) can lead to burnout syndrome and lower QoL.[3,4] In our study, a specific combination of selected variables explained 32% of the variance in the PSS scores. These variables accounted for only a proportion of the variance because several factors contribute to perceived stress. In this study, medication intake due to work emerged as an important predictor of higher levels of perceived stress. These findings suggest that a subgroup of faculty members may need to take medications to cope with work stress. Further, such individuals may not know how to cope with stressful work demands, and this in turn may lower their QoL. Some researchers have underscored the feasibility and clinical effectiveness of psychotherapy in promoting well-being and alleviating distress among college students.[8] Identifying individuals with this occupational profile and referring them to psychological counselors will facilitate the prevention of more serious mental health problems.

Variables such as sleep duration and leisure time were inversely related to perceived stress. They may serve as coping strategies that effectively alleviate stress. Our findings also suggest that longer sleep durations predict better QoL. Past studies conducted among healthcare faculty members have shown that inadequate leisure time leads to sleep problems (which in turn can render them vulnerable to mental illnesses), burnout, and significant changes within their organizations. These factors can negatively affect their social and family relationships and, consequently, worsen their health and QoL.[11] In another study, there was a statistically significant association between stress and poor sleep quality among medical students.[21] Accordingly, the researchers recommended the establishment of counseling centers that promote good sleep hygiene in academic institutions.

Exercise has been recommended as a coping strategy that is effective in reducing stress.[22] In this study, there was a significant difference in perceived stress and QoL between individuals who engaged and did not engage in physical activity. Li and Kou (2018) found that lower levels of physical activity are associated with greater stress among university professors. According to them, frequent and regular engagement in physical exercise increases energy levels and helps individuals feel refreshed and optimistic. These positive outcomes enhance their work efficiency and relieve psychological stress.[23] However, in our study, physical activity was not retained as a significant predictor of perceived stress or QoL in the final multivariate regression model. Leisure time rather than physical activity emerged as a significant

predictor of perceived stress in the final multivariate regression model. Thus, when compared to physical activity, leisure time was more effective in alleviating stress and, consequently, improving the QoL of the graduate dental faculty members who participated in this study. Yao et al. (2015) found that greater involvement in hobbies reduces burnout among Chinese medical faculty members.[24]

It is noteworthy that stress is a multicausal variable. Further, it is difficult to isolate the various stressors that operate in academic environments. Past studies have shown that stress is associated with other variables such as scientific research pressure, academic title promotion, and lack of routine breaks.[25] In this study, there was no association between perceived stress and any of the occupational characteristics that were assessed (e.g., occupying a management position, kind of employment bond, and number of published papers). However, dual employment emerged as a significant predictor of perceived stress. This finding contradicted our predictions. Specifically, the findings suggest that faculty members who work in one only institution experience greater stress. Studies conducted among faculty members from different disciplines have shown that more than one-third of them experience burnout and that 86% of them work for 40 hours (i.e., exclusive dedication).[3] Thus, working in other institutions with different work environments may influence their perceived stress levels; this is one explanation for our findings. In addition, working for more than one institution may not necessarily increase workload. Hence, it is possible that faculty members who are employed by only one institution face greater work demands, which increase their perceived stress levels.

With regard to QoL, a specific combination of selected variables (i.e., perceived stress, sleep duration, and medication intake due to work) explained 50%, 58%, 27%, and 40% of the variance in the physical health, psychological, social relationships, and environment domain scores, respectively. The effects of these variables on QoL, especially the physical health and psychological domains, are readily apparent. Perceived stress played an important role in explaining the variance in QoL scores, especially the psychological domain scores. Over the past few decades, work pressures in academia have consistently been increasing at both the national and global level. This has resulted in the emergence of several stressors.[25] Additionally, job-related burnout has been found to have a direct negative effect on the QoL of faculty members,[24] irrespective of their discipline.[3] Coping strategies that alleviate stress appear to improve QoL. In this regard, our findings suggest that longer

leisure and sleep durations and greater engagement in physical activity are effective in alleviating stress. Another study demonstrated strong support for the effectiveness of the practice of mindfulness in reducing job burnout among healthcare professionals and teachers.[26] These coping strategies should be promoted in academic environments to improve the QoL of faculty members.

This study has some limitations. Since a cross-sectional design was adopted in this study, we could not examine causal relationships between the study variables (i.e., QoL and perceived stress). However, the emergent predictors delineate the coping strategies that are likely to be effective in alleviating stress and improving QoL. Since this was a pioneering exploratory study that was conducted among graduate dental faculty, the use of a cross-sectional design is justified. Another limitation pertains to the PSS. The scale developers have noted that this scale assesses the level of stress that one has experienced during the past one or two months. Therefore, we could assess only the level of stress that the faculty members had experienced within this time frame. In addition, we did not assess specific variables pertaining to their daily routines. These variables may paint a more comprehensive portrait of the causes of stress and their impact on QoL. Finally, our sample recruitment procedure may have been vulnerable to selection bias. Specifically, those with very high or low levels of stress may have chosen to not participate in this study.

CONCLUSION

Sex (i.e., female) and medication intake due to work predicted higher levels of perceived stress. In contrast, age, sleep duration, dual employment, and leisure time were associated with lower PSS scores. Sleep duration emerged as a predictor of better QoL, whereas perceived stress and medication intake due to work emerged as predictors of poor QoL. These findings are expected to inform the development of interventions that aim to improve well-being and prevent mental disorders among graduate dental faculty members.

REFERENCES

1. Schuster M da S, Dias V da V. Oldenburg Burnout Inventory – validação de uma nova forma de mensurar Burnout no Brasil. Cienc e Saude Coletiva 2018;23(2):553–62.

2. Meng Q, Wang G. A research on sources of university faculty occupational stress: A Chinese case study. Psychol Res Behav Manag 2018;11:597–605.
3. Alves PC, Oliveira A de F, da Silva Paro HBM. Quality of life and burnout among faculty members: How much does the field of knowledge matter? PLoS One 2019;14(3).
4. Yang X, Ge C, Hu B, Chi T, Wang L. Relationship between quality of life and occupational stress among teachers. Public Health 2009;123(11):750–5.
5. BRASIL. Plano de Ação em Ciência, Tecnologia e Inovação. Principais Resultados e Avanços. 2010.
6. Skevington SM, Lotfy M, O'Connell KA, WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res 2004;13(2):299–310.
7. Group WQ. Development of the World Health Organization WHOQOL-BREF quality of life assessment. The WHOQOL Group. Psychol Med 1998;28(3):551–8.
8. Vescovelli F, Melani P, Ruini C, Bitti PER, Monti F. University counseling service for improving students' mental health. Psychol Serv 2017;14(4):470–80.
9. Ahmady S, Changiz T, Masiello I, Brommels M. Organizational role stress among medical school faculty members in Iran: dealing with role conflict. BMC Med Educ 2007;7:14.
10. Evans TM, Bira L, Gastelum JB, Weiss LT, Vanderford NL. Evidence for a mental health crisis in graduate education. Nat Biotechnol 2019;36(3):282–4.
11. de Oliveira ERA, Garcia ÁL, Gomes MJ, Bittar TO, Pereira AC. Gênero e qualidade de vida percebida- Estudo com professores da área de saúde. Cienc e Saude Coletiva 2012;17(3):741–7.
12. Divaris K, Polychronopoulou A, Taoufik K, Katsaros C, Eliades T. Stress and burnout in postgraduate dental education. Eur J Dent Educ 2012;16(1):35–42.
13. Stillwell SB, Vermeesch AL, Scott JG. Interventions to Reduce Perceived Stress Among Graduate Students: A Systematic Review With Implications for Evidence-Based Practice. Worldviews Evidence-Based Nurs 2017;14(6):507–13.
14. Elani HW, Allison PJ, Kumar RA, Mancini L, Lambrou A, Bedos C. A systematic review of stress in dental students. J Dent Educ 2014 Feb [cited 2019 May 21];78(2):226–42.

15. BRASIL. GEOCAPES Sistema de Informações Georreferenciadas. CAPES. 2016.
16. Siqueira Reis R, Ferreira Hino AA, Romélio Rodriguez Añez C. Perceived Stress Scale. J Health Psychol 2010;15(1):107–14.
17. Fleck MP, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. [Application of the Portuguese version of the abbreviated instrument of quality life WHOQOL-bref]. Rev Saude Publica 2000;34(2):178–83.
18. Winefield AH, Gillespie N, Stough C, Dua J, Hapuarachchi J, Boyd C. Occupational Stress in Australian University Staff: Results From a National Survey. Int J Stress Manag 2003;10(1):51–63.
19. Cruz LN, Polanczyk CA, Camey SA, Hoffmann JF, Fleck MP. Quality of life in Brazil: normative values for the WHOQOL-bref in a southern general population sample. Qual Life Res 2011;20(7):1123–9.
20. Giannobile W V, Feine JS. Women in Science-A Century of Innovation and Leadership. J Dent Res 2019;98(13):1405–6.
21. Almojali AI, Almalki SA, Alothman AS, Masuadi EM, Alaqeel MK. The prevalence and association of stress with sleep quality among medical students. J Epidemiol Glob Health 2017 Sep 1;7(3):169–74.
22. Austin V, Shah S, Muncer S. Teacher stress and coping strategies used to reduce stress. Occup Ther Int 2005;12(2):63–80.
23. Li W, Kou C. Prevalence and correlates of psychological stress among teachers at a national key comprehensive university in China. Int J Occup Environ Health 2018;24(1–2):7–16.
24. Yao SM, Yu HM, Ai YM, Song PP, Meng SY, Li W. Job-Related Burnout and the Relationship to Quality of Life among Chinese Medical College Staff. Arch Environ Occup Heal 2015 Jan 2;70(1):27–34.
25. Punia V, Kamboj M. Quality of Work-life Balance Among Teachers in Higher Education Institutions. Learn Community-An Int J Educ Soc Dev. 2013;4(3):197.
26. Luken M, Sammons A. Systematic Review of Mindfulness Practice for Reducing Job Burnout _ American Journal of Occupational Therapy. Am J Occup Ther 2016;70(2):1–10.

ARTIGO 2 – Submetido no periódico European Journal of Dental Education (Qualis B2)

Predictors of perceived stress and quality of life among dental master and doctoral students

ABSTRACT

Objectives: This study aimed to identify predictors of perceived stress and quality of life (QoL) among dental master and doctoral students. **Materials and methods:** This is a cross-sectional study with brazilian students as participants (n=707). The following instruments were administered: Perceived Stress Scale (PSS), the WHOQOL-BREF, and a sociodemographic questionnaire. A linear regression model was estimated. **Results:** The results showed that female was associated with higher scores of PSS and lower scores of QoL. A negative correlation was observed between PSS and all four domains of QoL. Multivariate analysis revealed that the set of selected variables was capable of partially explain the variability of PSS score (28%) and of the four QoL domains: physical (52%), psychological (62%), social relationships (25%), and environment (37%). The variables number of children, hours of sleep, concurrent work and study, leisure time, and physical activity practice were associated with positive changes on QoL, while PSS and medication intake with negative. Lower PSS score was associated with the variables age, hours of sleep, leisure time and physical activity. **Conclusions:** Our findings suggest that perceived stress and medication intake due to study are important predictors of lower QoL in dental master and doctoral students, especially in the psychological domain. More hours of sleep, leisure time, and physical activity improved both QoL and perceived stress scores and might be feasible coping strategies for these outcomes in this population.

Keywords: Dental students, Mental health, Quality of life, Stress.

INTRODUCTION

Scientific production has increased in many countries, including the field of Dentistry.[1] For early-career scientists, including master and doctoral students, competing for academic demands, and high stress levels, among other variables, may lead to debilitating depression, bouts of anxiety, or even suicide attempts.[2] Studies have suggested that medical and dental students experience high rates of depression, stress, and suicide ideation[3,4] affecting the quality of life (QoL) of these individuals.[5]

Increasingly, health policies are recognizing that measures of disease alone are not sufficient to determine health status. Therefore, multi-level and multi-dimensional measures of health and well-being, such as QoL, have been used in several studies.[6] The WHO defines QoL as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns." It is a subjective evaluation that is embedded in a cultural, social, and environmental context.[7]

Researchers relates that undergraduate dental students experience considerable amounts of stress during their training, mainly due to the demanding nature of the training.[4,8] The main effects of stress are felt on psycho-emotional well-being, physical health, academic performance, and on habits such as smoking and alcohol consumption.[4] Similar or even more diverse stressful activities are required by those enrolled in graduate programmes.[9]

Graduate-level dental programmes are commonly divided into the areas of specialty training, research degrees (i.e. Masters Degrees or PhDs) or a combination of the two.[9] In Brazil, after completing the undergraduate degree and obtaining the DDS degree, professionals seek universities to conduct graduate courses, classified as *Lato Sensu* or *Stricto Sensu*. *Lato sensu* graduate courses are considered specialization courses with a primarily clinical focus for professional practice, while *Stricto Sensu* is related to masters and doctorates focused on scientific research and academic training.[10] The number of Dental master and doctorate courses in Brazil has grown considerably in the last 10 years, and this growth was proportional to the increase of its scientific production that represents the second largest in the world.[1,10,11]

National statistics specific to dental master and doctoral students are difficult to obtain, for any country. A research demonstrated high rates of burnout symptoms among postgraduate dental students and found that perceived stress was positively associated with burnout.[9] Elevated stress levels can impede performance on tasks that

require divided attention, working memory, retrieval of information from memory, and decision making.[12] As mental health is an important determinant of QoL, it has been demonstrated that perceived stress is an important risk factor for poor mental health among young adults.[13]

Quality of life and mental illness due to stress is a growing concern within graduate education (master and doctorate).[14] Despite increased discussion on this theme, it is necessary to better understand the factors that impact the stress and QoL in master and doctoral student populations. Especially in dentistry, to the best of our knowledge, there are no studies investigating these outcomes in this population. Thus, the aim of this study was to identify predictors of perceived stress and quality of life among dental master and doctoral students.

MATERIALS AND METHODS

This research was a cross-sectional study developed in Brazil, which was approved by the Human Ethics and Research Committee of the Pontifical Catholic University of Paraná. Informed consent was obtained from all participants included in the study.

Sample

The population involved was composed of students from all Brazilian public and private graduate programs in Dentistry (Master's degree and Ph.D.). Based on the most recent available records of a national survey[11] carried out before this study, which included a population of 7,507 students, a sample calculation was performed through the method of sampling proportions admitting p = (1-p) = 50%. As a result, a sample of 439 individuals was established, admitting a 95% confidence level with a maximum error margin of 5%.

Data collection strategy

Self-administered questionnaires uploaded in a digital platform (Qualtrics, LLC, Salt Lake, Utah) were used to collect data. A single response link to the questionnaire was sent to respondents by e-mail along with information about free and informed consent and a reminder was set to be sent after three days. Previously, the coordinators of the courses had been contacted by e-mail to formalize students'

permission to participate in the research. Coordinators were informed about the objectives of the study and asked to send the questionnaires via e-mail to the students of each corresponding institution. Additionally, the questionnaires were distributed through a list of contacts available in the annals of the 35th Annual Meeting of the Brazilian Division of the International Association for Dental Research (SBPqO-IADR)[15] which included e-mail addresses of graduate students in Dentistry throughout all the country. The data collection period was between August 15 and December 15, 2018.

Data collection instruments

The Perceived Stress Scale (PSS), translated and validated for Brazilian population, was administered.[16] This instrument is comprised of 14 items measured with a 5-point Likert scale, and its total score ranges between zero and 56 points. Items are divided into seven negative (Factor 1: 1, 2, 3, 8, 11, 12 e 14) and seven positive questions (Factor 2: 4, 5, 6, 7, 9, 10 e 13). A higher overall score means higher perceived stress.

The WHOQOL-BREF[7] is used to evaluate QoL in adult populations and was also translated and validated for portuguese.[17] It contains 26 questions, two of which measure overall health. The other 24 questions are distributed in four domains: physical health, psychological, social relationships, and environment. The items in each domain are measured on a 5-point Likert scale. Depending on the item, the scale may evaluate intensity (not at all - extremely), capacity (not at all - completely), frequency (never - always) and satisfaction evaluation (very dissatisfied - very satisfied; very poor - very good). Scores in the four domains range from zero to 100, and higher scores indicate better QoL.

A questionnaire created by the authors was also used, containing sociodemographic data (sex, age, marital status, location, number of children, educational level), labor (concurrent work and study, scholarship, number of papers published), and health variables (medication intake due to study, hours of sleep, leisure time, physical activity).

Statistical analysis

Within the univariate analysis, categorical variables were described using total number and percentage while continuous variables were described by mean, median, standard deviation, minimum and maximum. Cronbach's alpha was used to assess the internal consistency of the WHOQOL-BREF domains and PSS. During bivariate analysis comparisons between dependent (PSS score and QoL) and independent variables (socio-demographic characteristics) were performed through One-way ANOVA and Student's t-test. Chi-square test was used to verify the association between independent variables. To identify the exact relationship between variables when ANOVA was used, Tukey's post-hoc and Games-Howell tests were applied. Levene's test was used to assess the homogeneity of variances. When the data distribution was homogeneous, Tukey's test was performed, otherwise Games-Howell test was utilized. Pearson's correlation coefficient was used to determine the relationship between the continuous independent variables and dependent variables (e.g., PSS score and QoL scores). Variables presenting a significant correlation with PSS and QoL scores were then included in multiple linear regression analyses with stepwise selection using entry and exit probabilities of 0.05 and 0.1, respectively. A significance level of 5% was adopted. Data were analyzed using the SPSS statistical software, version 25 (IBM Company, Chicago) and Microsoft Office Excel 365.

RESULTS

The present study involved 802 participants and 95 incomplete questionnaires were excluded, resulting in a sample of 707 students. Table 1 and 2 shows the sociodemographic characteristics of the sample.

Chi-square test revealed a statistically significant association between medication intake due to study and sex, leisure time, and physical activity. These results showed that individuals who had already used medication because of problems related to studies were mostly women and students who did not have leisure time nor practiced physical activity.

PSS

The PSS exhibited high levels of internal consistency (Cronbach's alpha = 0.904). PSS mean scores and results of comparisons with One-way ANOVA and Student's t-test are presented in Table 1. A statistically significant difference was

observed between the PSS mean scores of some categorical variables (Table 1). Female had a significant higher PSS score comparing to male students, as well as not married students compared with married. Individuals who had a scholarship, those who had taken medication due to study and students from public programs also showed significant higher mean score of PSS. Leisure time and physical activity improved significantly the PSS mean score.

With regards to continuous variables, a negative but very weak correlation was found between PSS mean scores and age, number of children, and hours of sleep, which indicated that as the mean values of these variables increased the mean values of perceived stress scale decreased.

QoL

All four domains of the WHOQOL-BREF exhibited high levels of internal consistency: physical health, psychological, social relationships, and environment (Cronbach's alpha = 0.786, 0.823, 0.716, and 0.759, respectively).

Table 3 presents the mean score values in the four domains of QoL as well as results of comparisons with One-way ANOVA and Student's t-test. There were significant differences between some categorical variables and these domains. Men presented significantly higher values in the physical and psychological domains. Regarding marital status, married individuals showed higher QoL scores compared to single individuals in the physical health, psychological, and environmental domains. Students who had already taken medication for problems related to their studies, and did not have leisure time nor practiced physical activity often showed lower QoL scores in all domains. Having a scholarship, not working concurrently with studies, and being part of public graduate programs also had an influence on lower QoL rates. All four domains scores were inversely correlated with PSS scores ($p < 0.001$).

Perceived stress predictors

Predictors for PSS scores in dental master and doctoral students based on multivariate analyses are summarized in Table 4. In the final model, the remaining variables explained 28% of the PSS scores (R^2=0,28). The coefficient (β) shows how much its presence increased (positive value) or reduced (negative value) the predicted PSS score.

Quality of life predictors

Multivariate analysis revealed that the set of selected variables was capable of partially explaining the variability (R^2) of the four domains: physical health, psychological, social relationships, and environment (52%, 62%, 25%, and 37%, respectively). These results are shown in Table 5. The coefficient (β) shows how much the independent variables predicted the QoL score in each domain.

Table 1 – Socio-demographic characteristics of the study population and results of comparisons by mean score of perceived stress scale (PSS).

Categorial Variables	n	%	PSS	SD	*P*
Sex					
Male	191	27	28.8	8.7	
Female	516	73	32.5	8.0	0.000*
Marital status					
Not married	488	69.3	32.5**a**	8.2	
Maried	203	28.8	29.5**b**	8.3	
Divorced	13	1.8	27.7**ab**	7.4	0.000*
Educational level					
Master's student	392	55.4	31.6	8.6	
Doctoral student	315	44.6	31.4	8.0	0.824
Location					
North	9	1.3	32.6	2.0	
Northeast	81	11.5	31.5	0.9	
South	208	29.5	31.3	0.5	
Southeast	393	55.7	31.6	0.4	
Midwest	15	2.1	32.0	2.2	0.981
Scholarship					
Yes	412	58.2	32.1	7.8	
No	296	41.8	30.7	9.0	0.026*
Concurrent work and study					
Yes	411	58.1	31.0	8.5	
No	297	41.9	32.2	8.1	0.520
Program					
Public	484	68.6	32.0	8.3	
Private	222	31.4	30.4	8.4	0.015*
Number of papers published					
None	284	40.2	31.5	8.5	
One	200	28.3	32.5	7.3	

2 to 5	203	28.8	30.9	8.9	
6 to 10	16	2.3	29.8	9.7	
More than 10	3	0.4	23	4.3	0.109
Medication intake due to study					
Yes	302	42.7	34.4**a**	7.6	
No	394	55.7	29.4**b**	8.2	
Do not remember	11	1.6	30.4**ab**	9.0	0.000*
Leisure time					
Yes	257	36.5	28.8	8.2	
No	448	63.5	33.1	8.1	0.000*
Physical activity					
Yes	281	39.7	29.5	8.2	
No	427	60.3	32.8	8.2	0.000*

(SD) Standard deviation; (P) p value; (PSS) perceived stress scale mean score
Different letters mean statistical significance
*Statistically significant

Table 2 – Socio-demographic characteristics of the study population.

Continuous variables	Mean	SD	Median	Minimum	Maximum
Age (years)	30.4	7.4	28	21	65
Number of children	0.2	0.6	0	0	4
Hours of sleep	6.4	1.03	6	2	12

(SD) standard deviation

Table 3 – Mean score values for the four domains of quality of life and results stratified by socio-demographic characteristics.

	Physical		**Psychological**		**Social**		**Environment**	
Variables	Mean (SD)	*P*	Mean (SD)	*P*	Mean (SD)	*P*	Mean (SD)	*P*
All subjects	62.7 (16.2)		55.8 (17.6)		59.8 9 (21.3)		57.5 (14.8)	
Sex								
Male	65.6 (15.8)		58.9 (18.4)		58.9 (21.9)		58.1 (15.2)	
Female	61.5 (16.2)	0.003*	54.7 (17.1)	0.004*	60.1 (21.1)	0.513	57.3 (14.6)	0.485
Marital status								
Not married	61.2 (15.5)**a**		53.7 (17.1)**a**		58.8 (20.5)**a**		55.7 (14.3)a	
Maried	65.6 (17.4)**b**		60.2 (17.8)**b**		60.8 (22.9)**ab**		61.5 (15.2)b	
Divorced	67.0 (13.3)**ab**	0.003*	63.1 (15.5)**ab**	0,000*	73.7 (17.6)**b**	0.031*	57.9 (11.8)ab	0,000*
Educational level								
Master's student	62.6 (16.3)		55.6 (17.4)		59.5 (20.9)		56.2 (15.1)	
Doctoral student	62.7 (16.1)	0.951	56.0 (17.7)	0.752	60.3 (21.9)	0.615	59.0 (14.2)	0.001*
Location								
North	63.8 (6.8)		52.3 (5.6)		51.8 (7.0)		56.2 (4.5)	
Nostheast	61.0 (1.9)		54.5 (2.0)		58.3 (2.5)		55.9 (1.6)	
South	65.0 (1.1)		56.3 (1.2)		61.7 (1.4)		59.9 (1.0)	
Southeast	61.6 (0.8)		55.9 (0.8)		59.7 (1.0)		56.4 (0.7)	
Midwest	63.8 (3.3)	0.129	55.2 (4.2)	0.908	52.2 (4.9)	0.267	60.0 (3.4)	0.052
Scholarship								
Yes	61.4 (16.3)		54.9 (17.1)		59.0 (21.1)		56.4 (14.4)	
No	64.4 (16.0)	0.014*	57.2 (18.2)	0.082	61.0 (21.7)	0.221	59.1 (15.1)	0.015*
Concurrent work and study								
Yes	63.9 (16.1)		57.6 (17.9)		60.6 (21.6)		59.5 (15.0)	

No	60.9 (16.2)	0.015*	53.4 (16.9)	0.002*	58.7 (20.9)	0.248	54.8 (14.0)	0,000*
Program								
Public	62.2 15.8)		54.9 (17.4)		60.3 (21.2)		56.7 (14.5)	
Private	63.7 (17.0)	0.230	57.9 (17.7)	0.039	58.8 (21.6)	0.386	59.1 (15.2)	0.047*
Number of papers published								
None	62.1 (15.9)		55.4 (17.7)		59.6 (20.9)		56.9 (15.0)	
One	61.0 (15.7)		54.6 (17.0)		57.9 (21.5)		57.0 (15.4)	
2 to 5	64.5 (17.1)		57.0 (18.0)		61.6 (22.1)		58.9 (14.1)	
6 to 10	66.0 (16.3)		59.1 (16.4)		63.5 (19.2)		58.0 (9.8)	
More than 10	69.0 (4.1)	0.194	66.6 (7.2)	0.460	66.6 (8.3)	0.423	51.0 (10.0)	0.527
Medication intake due to study								
Yes	56.1 (16.4)**a**		49.7 (17.1)**a**		53.8 (21.9)**a**		54.7 (14.6)**a**	
No	67.6 (14.1)**b**		60.6 (16.4)**b**		64.4 (19.6)**b**		59.8 (14.5)**b**	
Do not remember	63.6 (16.7)**ab**	0.000*	53.7 (20.5)**ab**	0.000*	65.1 (25.2)**ab**	0.000*	53.1 (16.7)**ab**	0.000*
Leisure time								
Yes	68.1 (15.2)		61.6 (16.6)		65.9 (20.6)		62.5 (14.6)	
No	59.5 (16.0)	0.000*	52.5 (17.3)	0.000*	56.5 (21.0)	0.000*	54.7 (14.0)	0.000*
Physical activity								
Yes	67.3 (15.0)		60.5 (16.2)		63.1 (20.6)		62.2 (13.8)	
No	59.6 (16.3)	0.000*	52.7 (17.8)	0.000*	57.7 (21.6)	0.001*	54.4 (14.6)	0.000*

(SD) Standard deviation; (P) p value; Different letters mean statistical significance; *Statistically significant

Table 4 – Perceived stress predictors using multivariable linear regression.

Independent variables	R^2	**β**	*P*
	0.280		
α=constant		49.7	0.000
Sex			
Male		0	-
Female		2.7	0.000
Age		-0.3	0.000
Hours of sleep		-1.7	0.000
Medication intake due to study			
Yes		4.0	0.000
No		0	-
Leisure time			
Yes		-2.5	0.000
No		0	-
Physical activity			
Yes		-1.7	0.006
No		0	-

(P) p value; (PSS) perceived stress scale mean score; (P) p value; (β) coefficient of each independent variable by regression.
All results were statistically significant at $p<0.05$

Table 5 – Quality of life predictors using multivariable linear regression.

Independent variables	Physical		Psychological		Social		Environment	
	β	*P*	**β**	*P*	**β**	*P*	**β**	*P*
R^2	0.528		0.628		0.266		0.375	
α=constant	79.2	0.000	99.3	0.000	79.9	0.000	66.3	0.000
PSS score	-1.1	0.000	-1.5	0.000	-0.9	0.000	-0.8	0.000
Sex								
Male	-	-	2.3	0.019	-	-	-	-
Female	-	-	0	-	-	-	-	-
Number of children	-	-	2.3	0.001	-	-	2.1	0.008
Educational level								
Master's student	-	-	-	-	-	-	0	-
Doctoral student	-	-	-	-	-	-	3.0	0.002
Hours of sleep	2.7	0.000	-	-	1.5	0.009	1.1	0.021
Concurrent work and study								
Yes	1.87	0.035	1.9	0.032	-	-	3.7	0.000
No	0	-			-	-	0	-
Medication intake due to study								
Yes	-5.0	0.000	-3.2	0.000	-4.8	0.000	-	-
No	0	-	0	-	0	-	-	-
Leisure time								
Yes	-	-	2.2	0.021	2.9	0.018	3.1	0.004
No	-	-	0	-	0	-	0	-

Physical activity								
Yes	3.3	0.000	2.2	0.018	-	-	4.0	0.000
No	0	-	0	-	-	-	0	-

(P) p value; (β) coefficient of each independent variable by regression; the blank cells mean variables that were not considered in the final model.
All results were statistically significant at $p<0.05$

DISCUSSION

Research policy observers are increasingly concerned about the potential impact of current academic working conditions on mental health[18] and greater attention has been given to master and doctoral students' well-being and QoL[2,14]. Regarding to the field of Dentistry, students are required to participate in a wide spectrum of strenuous activities such as patient care, teaching and research and they may experience high levels of burnout.[9] The findings of our study reveal a concerning negative influence of variables such as perceived stress level and medication intake due to study on the QoL of dental master and doctoral students. On the other hand, we observed other variables, such as hours of sleep, leisure time and physical activity, that had a positive effect and may be a feasible way to improve master and doctoral students' QoL and stress.

With regards to the overall WHOQOL-BREF score, our findings showed differences concerning the psychological and social relationships domains, when compared to those from a Brazilian study carried out with the general population.[19] In this regard, master and doctoral students had lower QoL scores in these domains compared to the general population. Other studies that have applied the same instrument with north american undergraduate dental students[20] and brazilian medical students[21] showed better QoL scores for all domains. The population of the present study seems to have specific characteristics, such as intellectual demands of production, which may explain the differences in QoL scores, especially in the psychological and social relationships domains. Therefore, other authors have strong concerns about a mental health crisis within the graduate student population, which seems to be more vulnerable to experience depression and anxiety, and this is an important public health issue.[14]

In this study, the final regression model showed that female students presented higher PSS scores and lower QoL scores compared to male students, especially in the phycological domain. These findings are in agreement with the majority of studies that have evaluated these variables[22] and others, such as anxiety and depression.[14,23] Pekmezovic et al. (2011)[23] studied the factors associated with health-related QoL among Belgrade University students and proposed that lower QoL scores might be related to higher levels of depression in female students. On the other hand, Paro et

al. (2010)[24] found that female medical students without depressive symptoms also showed lower levels of QoL regarding the physical and mental health domains. In addition, other studies have revealed lower QoL among women in the general population.[19] Our results also showed that female sex was associated with medication intake due to study. The intrinsic psychological differences between genders could explain these findings. Females are more likely to articulate their worries and emotions.[8] In addition men generally have a strong sense of independence and more rugged feelings, consequentially they are less susceptible to the impact of the external environment.[25]

The set of variables selected in the regression model was capable of explaining 62% of the variability in the QoL score of the psychological domain. This was the highest explanatory value found in all QoL domains followed by physical (52%), environment (37%), and social relationships (25%). Mental health is considered to be a main determinant of QoL.[13] In our study, higher perceived stress scores and medication intake due to study had a negative impact on this outcome. The strong influence of these variables as predictors of lower QoL scores in dental master and doctoral students is concerning. This population often experiences a very stressful routine of activities and, therefore, they may experience high levels of burnout, anxiety, and depression.[9,26] Other authors have also mentioned perceived stress as an important risk factor for low mental health in university students.[13] Could it be a given condition of master and doctoral students to have their quality of life affected by stress? Because of the potential negative impact of stress, medical educators might want to consider different modalities for training students in stress management[12], including mind-body stress reduction.[27] Based on our findings, this strategy could improve the QoL of dentistry master and doctoral students.

On the other hand, other variables in this study were found to have a positive impact on QoL domains such as more hours of sleep, physical activity, and leisure time. These variables were also predictors to less perceived stress among dental master and doctoral students. These findings reveal feasible ways to improve the QoL and reduce stress level of master and doctoral students. In fact, in our study, these three variables increased the scores of all QoL domains. It has been demonstrated that practicing physical activity can improve the QoL of medical students[28] and

adolescents.[29] Therefore, graduate programs should encourage students to practice this kind of activity. Universities should invest in creating supportive physical, social and academic environments that promote student mental wellbeing.[30] Alternatively, the academic demands should be organized alongside other activities such as yoga, arts, and music[31] or, as demonstrated in the present study, by providing opportunities for concurrent work and study, which could help to shift the focus from academics.

Our findings showed similar levels of perceived stress to those found in another study with a graduate student population.[32] The PSS scale used was originally suggested for examining the gap of non-specific appraised stress in the etiology of health conditions as well as an outcome measure of experienced levels of stress.[33] Although some of the variables examined, such as sex, age, hours of sleep, medication intake due to study, leisure time, and physical activity had an association with PSS, they could explain only 28% on the PSS variation. We understand that the graduation environment has several internal stressors such as publishing and mentoring relationships,[26] not to mention extra-curricular factors like financial constraints and family issues.[9] On the other hand, as mentioned above, our findings showed a strong association between PSS and all domains of QoL. Therefore, perceived stress is an important predictor of QoL in the studied population.

No association was found between the number of papers published and both PSS and QoL scores. This is a very polemic issue in the academic area, which refers to policies that place a high premium on the number of manuscripts published.[34] Our findings suggest that this aspect did not affect the QoL of this population. Possibly the biggest problem is not related to the number of publications, but the pressure and the difficulties to publish. Liu et al. (2019)[26] found that the difficulties in publishing a doctoral qualification paper had a significant effect on anxiety and depression among doctoral students in a medical university. Thus, it is reasonable to assume that the thesis, as the main work conducted on a Ph.D., generates the greatest concerns. Additionally, Hollmann et al. (2015)[35] observed that the workload was the most commonly cited barrier to publication masters theses in public health.

Our findings showed some similarities and also divergences comparing to results from researches with dental undergraduate population. Gender was also a predictor of stress,[8] where women showed highest stress level. Coping strategies such

as “watching television, reading, sleeping and shopping" were associated with stress reduction,[8] which may be included within leisure activities as observed in this present study. Regarding QoL, our results corroborate with Andre et al., (2017)[20] that observed highest mean score for Physical Health domain in an American undergraduate population, while the Psychological domain had the lowest. However, in the present study, scores of all domains of QoL had lower values comparing to this this American study,[20] and higher comparing to a Saudi Arabia research.[36] Therefore, because quality of life concerns several aspects of individuals' life, is hard to affirm how much this variation is due to the different activities between graduate and undergraduate students.

Some limitations of this study should be mentioned. First, we performed a cross-sectional study and, therefore, we cannot attribute a causal effect of the studied variables on QoL outcomes neither assess its variability along time. Second, the PSS scale suggests that the best predictions occur within a period of one or two months, so we could only consider perceived stress that occurred during that extent of time. Third, we did not collect specific variables about the daily routine of dentistry master and doctoral students, which could provide more accurate information regarding the causes of stress and its impact on QoL. Finally, there could be a selection bias regarding data collection since respondents who were more stressed might have not answered the questionnaire.

CONCLUSION

In conclusion, this study identified important predictors of master and doctoral students' perceived stress and QoL. Gender and medication intake due to study are predictors of higher stress. The perceived stress and medication intake due to study are important predictors of lower QoL among dental master and doctoral students, especially in the psychological, physical and social domains. On the other hand, more hours of sleep, leisure time, and physical activity improved both QoL and perceived stress, thus, might be feasible coping strategies for these outcomes in this population. These findings indicate potential areas in which health and education policies may create strategies to enhance well-being of master and doctoral students and prevent metal illness.

REFERENCES

1. Scimago. SJR World Report. 2019. https://www.scimagojr.com/worldreport.php Accessed December 7, 2019.
2. Gewin V. Mental health: Under a cloud. Nature. 2012;490:299–301.
3. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students. JAMA. 2016;316(21):2214.
4. Elani HW, Allison PJ, Kumar RA, Mancini L, Lambrou A, Bedos C. A systematic review of stress in dental students. J Dent Educ. 2014;78(2):226–42.
5. de Leval N. Quality of life and depression: symmetry concepts. Qual Life Res. 1999;8(4):283–91.
6. Skevington SM, Lotfy M, O'Connell KA, WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res. 2004;13(2):299–310.
7. The Whoqol Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. The WHOQOL Group. Psychol Med. 1998;28(3):551–
8. Basudan S, Binanzan N, Alhassan A. Depression, anxiety and stress in dental students. Int J Med Educ. 2017; 24(8):179–86.
9. Divaris K, Polychronopoulou A, Taoufik K, Katsaros C, Eliades T. Stress and burnout in postgraduate dental education. Eur J Dent Educ. 2012;16(1):35–42.
10. Pinto GS, Nascimento GG, Mendes MS, Ogliari FA, Demarco FF, Correa MB. Scholarships for scientific initiation encourage post-graduation degree. Braz Dent J. 2014;25(1):63-8.
11. Brasil. GEOCAPES Sistema de Informações Georreferenciadas. CAPES. 2016. https://geocapes.capes.gov.br/geocapes/ Accessed march 6, 2019.
12. LeBlanc VR. The Effects of Acute Stress on Performance: Implications for Health Professions Education. Acad Med. 2009;84(Supplement):25–33.
13. Bovier PA, Chamot E, Perneger T V. Perceived stress, internal resources, and social support as determinants of mental health among young adults. Qual Life Res. 2004;13(1):161–70.

14. Evans TM, Bira L, Gastelum JB, Weiss LT, Vanderford NL. Evidence for a mental health crisis in graduate education. Nat Biotechnol. 2018;36(3):282–4.
15. SBPqO. 35th SBPqO Annual meeting. Braz Oral Res. 2018;32(2):28-528.
16. Siqueira Reis R, Ferreira Hino AA, Romélio Rodriguez Añez C. Perceived Stress Scale. J Health Psychol. 2010;15(1):107–14.
17. Fleck MP, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, Pinzon V. Application of the Portuguese version of the abbreviated instrument of quality life WHOQOL-bref. Rev Saude Publica. 2000;34(2):178-83.
18. Levecque K, Anseel F, De Beuckelaer A, Van der Heyden J, Gisle L. Work organization and mental health problems in PhD students. Res Policy. 2017;46(4):868–79.
19. Cruz LN, Polanczyk CA, Camey SA, Hoffmann JF, Fleck MP. Quality of life in Brazil: normative values for the WHOQOL-bref in a southern general population sample. Qual Life Res. 2011;20(7):1123–9.
20. Andre A, Pierre G, McAndrew M. Quality of Life Among Dental Students: A Survey Study. J Dent Educ. 2017;81(10):1164–70.
21. Chazan ACS, Campos MR, Portugal FB. Quality of life of medical students at the State University of Rio de Janeiro (UERJ), measured using Whoqol-bref: a multivariate analysis. Cien Saude Colet. 2015;20(2):547–56.
22. Solis AC, Lotufo-Neto F. Predictors of quality of life in Brazilian medical students: a systematic review and meta-analysis. Brazilian J Psychiatry. 2019; 41(6):556-567.
23. Pekmezovic T, Popovic A, Kisic Tepavcevic D, Gazibara T, Paunic M. Factors associated with health-related quality of life among Belgrade University students. Qual Life Res. 2011;20(3):391–7.
24. Paro HBMS, Morales NMO, Silva CHM, Rezende CHA, Pinto RMC, Morales RR, et al. Health-related quality of life of medical students. Med Educ. 2010;44(3):227–35.
25. Yang X, Ge C, Hu B, Chi T, Wang L. Relationship between quality of life and occupational stress among teachers. Public Health. 2009;123(11):750–5.
26. Liu C, Wang L, Qi R, Wang W, Jia S, Shang D, et al. Prevalence and associated factors of depression and anxiety among doctoral students: the mediating effect of

mentoring relationships on the association between research self-efficacy and depression/anxiety. Psychol Res Behav Manag. 2019;12:195–208.
27. Stillwell SB, Vermeesch AL, Scott JG. Interventions to Reduce Perceived Stress Among Master and doctoral students: A Systematic Review With Implications for Evidence-Based Practice. Worldviews Evidence-Based Nurs. 2017;14(6):507–13.
28. Peleias M, Tempski P, Paro HB, Perotta B, Mayer FB, Enns SC, et al. Leisure time physical activity and quality of life in medical students: results from a multicentre study. BMJ Open Sport Exerc Med. 2017;3(1):e000213.
29. Motamed-Gorji N, Qorbani M, Nikkho F, Asadi M, Motlagh ME, Safari O, et al. Association of screen time and physical activity with health-related quality of life in Iranian children and adolescents. Health Qual Life Outcomes. 2019;17(1):2.
30. Fernandez A, Howse E, Rubio-Valera M, Thorncraft K, Noone J, Luu X, et al. Setting-based interventions to promote mental health at the university: a systematic review. Int J Public Health. 2016;61(7):797–807.
31. Cocchiara RA, Peruzzo M, Mannocci A, Ottolenghi L, Villari P, Polimeni A, et al. The Use of Yoga to Manage Stress and Burnout in Healthcare Workers: A Systematic Review. J Clin Med. 2019;8(3):284.
32. Faro A. Estresse e estressores na pós-graduação: estudo com mestrandos e doutorandos no Brasil. Psicol Teor e Pesqui. 2013;29(1):51–60.
33. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983;24(4):385–96.
34. Hasan SS, Ahmadi K. Publish or Perish. Acad Med. 2017 Feb;92(2):140.
35. Hollmann M, Borrell C, Olatz G, Fernández E, Alonso J. Factors influencing publication of scientific articles derived from masters theses in public health. Int J Public Health. 2015;60(4):495–504.
36. Al-Shibani N, Al-Kattan R. Evaluation of quality of life among dental students using WHOQOL-BREF questionnaire in Saudi Arabia: A cross sectional study. Pak J Med Sci. 2019;35(3):668-673.

ANEXOS

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ORIGINAL ARTICLE

ADEA THE VOICE OF DENTAL EDUCATION WILEY

Perceived stress and quality of life among graduate dental faculty

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Abstract

Objective: This study aimed to identify the predictors of perceived stress and quality of life (QoL) among graduate dental faculty.

Methods: This cross-sectional study was conducted using a representative sample of 348 dental faculty members from master's and doctoral programs in Brazil. Data were collected using self-administered questionnaires between August and December 2018. QoL was assessed using the multidimensional World Health Organization Quality of Life assessment (WHOQOL-BREF). Perceived stress was assessed using the Perceived Stress Scale (PSS). Participant sociodemographic characteristics served as the independent variables. The data were subjected to linear regression analysis.

Results: Women obtained higher PSS scores and lower QoL scores ($P < 0.05$). There was a negative correlation between perceived stress and all 4 QoL domains. Multivariate analysis revealed that a combination of the independent variables (i.e., sex, age, sleep duration, dual employment, medication intake due to work, and leisure time) explained 32% of the variance in perceived stress. Regarding QoL, perceived stress, sleep duration, and medication intake due to work explained 50%, 58%, 27%, and 40% of the variance in the physical health, psychological, social relationships, and environment domain scores, respectively. Sex (i.e., female) and medication intake due to work predicted higher levels of perceived stress. In contrast, age, sleep duration, dual employment, and leisure time were associated with lower levels of perceived stress.

Conclusion: Perceived stress and medication intake due to work had a negative effect on QoL, whereas sleep duration had a positive impact on QoL.

KEYWORDS
faculty, mental health, quality of life, stress

1 | INTRODUCTION

Given the current dynamics of markets in different fields, which are characterized by high levels of organizational competitiveness, human resources are regarded as contributors to quality and competitive advantages in relation to organizational activities.[1] University faculty members have several responsibilities (e.g., conducting scientific research, writing papers, and teaching), because of which they shoulder an increasingly heavy

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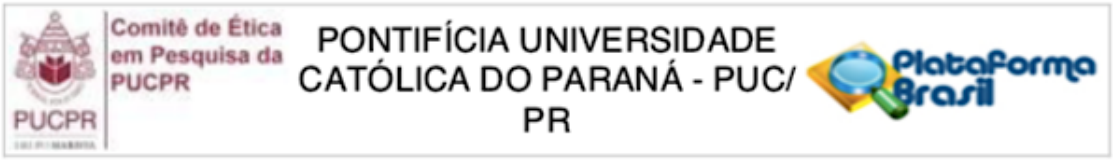
1 Parecer do comitê de ética



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: QUALIDADE DE VIDA, NÍVEL DE STRESS E FATORES ASSOCIADOS: ESTUDO ENVOLVENDO DOCENTES E DISCENTES DE PÓS-GRADUAÇÕES STRICTO SENSU EM ODONTOLOGIA NO BRASIL

Pesquisador: Orlando Motohiro Tanaka

Área Temática:

Versão: 1

CAAE: 91418118.3.0000.0020

Instituição Proponente: Pontifícia Universidade Católica do Parana - PUCPR

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 2.727.709

Apresentação do Projeto:

Resumo:

A discussão sobre a saúde de invíduos que estão envolvidos no sistema de pós-graduação strictu sensu no Brasil é urgente e extremamente necessário. Principamente na área da Odontologia, muito tem crescido o número de pesquisas, pesquisadores e investimentos. Porém, este cresciemento impõe elevada pressão visando a melhor qualificação dos programas, com a constante necessidade de aumento no volume de produção bibliográfica por professores e estudantes. Esta realidade é preocupante já que estes sujeitos estão vulneráveis ao adoecimento mental por consequência do stress, o que pode afetar sua qualidade de vida. Devido a falta de pesquisas que contemplem esta temática, o objetivo do
presente projeto é estudar a qualidade de vida e nível de estresse em docentes e discentes de pós-graduações Strictu sensu em Odontologia no Brasil.

Objetivo da Pesquisa:

Objetivo Primário: O presente projeto tem por objetivo estudar a qualidade de vida e nível de estresse em docentes e discentes de pós-graduações Strictu sensu em Odontologia no Brasil.

Objetivo Secundário: Associar qualidade de vida com nível de stress de docentes e discentes de cursos strictu sensu em Odontologia no Brasil.- Associar a qualidade de
vida com características sócio demográficas de docentes e discentes de cursos strictu sensu em

Endereço: Rua Imaculada Conceição 1155
Bairro: Prado Velho **CEP:** 80.215-901
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Telefone: (41)3271-2103 **Fax:** (41)3271-2103 **E-mail:** nep@pucpr.br

2

Odontologia no Brasil.- Associar o nível de stress com características sócio demográficas de docentes e discentes de cursos strictu sensu em Odontologia no Brasil.

Avaliação dos Riscos e Benefícios:

Riscos:

Os riscos oferecidos são mínimos, porém é possível que aconteçam desconfortos psicológicos devido a necessidade de responder perguntas decaráter pessoal ou relativas à especificidades de gêneros e raças. Para minimizar tais riscos, nós pesquisadores enviamos questionário que podeser respondido em local privativo. Também esclarecemos que a pesquisa está isenta de quaisquer intenções discriminatórias, nem conceitos filosóficos eugênicos (pureza racial).

Benefícios:

A pesquisa a se realizar, não oferece benefícios diretos aos seus participantes, trata-se de participação voluntária.

Comentários e Considerações sobre a Pesquisa:

Pesquisa se encontra de acordo com os critérios e normas éticas em pesquisa.

Considerações sobre os Termos de apresentação obrigatória:

Suficientes e satisfatórios

Recomendações:

Não há

Conclusões ou Pendências e Lista de Inadequações:

Não há

Considerações Finais a critério do CEP:

Aprovado.

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_1144694.pdf	08/06/2018 11:47:38		Aceito
Declaração de Pesquisadores	TCUD.docx	08/06/2018 11:47:00	Orlando Motohiro Tanaka	Aceito
Projeto Detalhado / Brochura Investigador	PROJETO_PB.docx	08/06/2018 10:56:52	Orlando Motohiro Tanaka	Aceito
TCLE / Termos de	TCLE.docx	08/06/2018	Orlando Motohiro	Aceito

Assentimento / Justificativa de Ausência	TCLE.docx	10:55:36	Tanaka	Aceito
Folha de Rosto	FOLHA_DE_ROSTO.pdf	08/06/2018 10:54:54	Orlando Motohiro Tanaka	Aceito

Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

CURITIBA, 21 de Junho de 2018

Assinado por:
NAIM AKEL FILHO
(Coordenador)

Termo de consentimento livre esclarecido – TCLE

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Você está sendo convidado(a) como voluntário(a) a participar do estudo **Qualidade de vida, nível de stress e fatores associados: estudo envolvendo docentes e discentes de pós-graduações stricto sensu em odontologia no Brasil** e que tem como objetivo estudar a qualidade de vida e nível de estresse em professores e estudantes de cursos de mestrado e doutorado de Odontologia no Brasil. Acreditamos que esta pesquisa seja importante porque pode levantar discussões e criar subsídios para que sejam planejadas estratégias visando melhorar as condições de trabalho nesta área.

PARTICIPAÇÃO NO ESTUDO

A sua participação no referido estudo será de responder algumas perguntas através de um questionário no computador e que pode levar entre 5 a 10 minutos para ser respondido.

RISCOS E BENEFÍCIOS

Através deste Termo de Consentimento Livre e Esclarecido você está sendo alertado de que, a pesquisa a se realizar, não oferece benefícios diretos aos seus participantes, trata-se de uma participação voluntária. Os riscos oferecidos são mínimos, porém é possível que aconteçam desconfortos psicológicos devido a necessidade de responder perguntas de caráter pessoal ou relativas à especificidades de gêneros e raças. Para minimizar tais riscos, nós pesquisadores enviamos questionário que pode ser respondido em local privativo. Também esclarecemos que a pesquisa está isenta de quaisquer intenções discriminatórias, nem conceitos filosóficos eugênicos (pureza racial).

SIGILO E PRIVACIDADE

Não há necessidade de se identificar com o nome. Nós pesquisadores garantiremos a você que sua privacidade será respeitada, qualquer dado ou elemento que possa, de qualquer forma, lhe identificar, será mantido em sigilo. Nós pesquisadores nos responsabilizaremos pela guarda e confidencialidade dos dados, bem como a não exposição dos dados de pesquisa.

AUTONOMIA

Nós lhe asseguramos a assistência durante toda pesquisa, bem como garantiremos seu livre acesso a todas as informações e esclarecimentos adicionais sobre o estudo e suas consequências, enfim, tudo o que você queira saber antes, durante e depois de sua participação. Também informamos que você pode se recusar a participar do estudo, ou retirar seu consentimento a qualquer momento, sem precisar justificar, e de, por desejar sair da pesquisa, não sofrerá qualquer prejuízo à assistência que vem recebendo.

RESSARCIMENTO E INDENIZAÇÃO

No entanto, caso tenha qualquer despesa decorrente da participação nesta pesquisa, tais como transporte, alimentação entre outros, bem como a meu acompanhante (se for o caso), haverá ressarcimento dos valores gastos na forma seguinte: mediante depósito em conta corrente.
De igual maneira, caso ocorra algum dano decorrente de sua participação no estudo, você será devidamente indenizado, conforme determina a lei.

CONTATO

Os pesquisadores envolvidos com o referido projeto são Thiago Martins Meira e Orlando Tanaka e com eles você poderá manter contato pelo telefone: (77) 99110-2000.

O Comitê de Ética em Pesquisa em Seres Humanos (CEP) é composto por um grupo de pessoas que estão trabalhando para garantir que seus direitos como participante de pesquisa sejam respeitados. Ele tem a obrigação de avaliar se a pesquisa foi planejada e se está sendo executada de forma ética. Se você achar que a pesquisa não

está sendo realizada da forma como você imaginou ou que está sendo prejudicado de alguma forma, você pode entrar em contato com o Comitê de Ética em Pesquisa da PUCPR (CEP) pelo telefone (41) 3271-2292 entre segunda e sexta-feira das 08h00 às 17h30 ou pelo e-mail nep@pucpr.br.

DECLARAÇÃO

Declaro que li e entendi todas as informações presentes neste Termo de Consentimento Livre e Esclarecido e tive a oportunidade de discutir as informações deste termo. Todas as minhas perguntas foram respondidas e eu estou satisfeito com as respostas. Entendo que receberei uma via assinada e datada deste documento e que outra via assinada e datada será arquivada nos pelo pesquisador responsável do estudo.

Enfim, tendo sido orientado quanto ao teor de todo o aqui mencionado e compreendido a natureza e o objetivo do já referido estudo, manifesto meu livre consentimento em participar, estando totalmente ciente de que não há nenhum valor econômico, a receber ou a pagar, por minha participação.

Dados do participante da pesquisa	
Nome:	
Telefone:	
e-mail:	

Local, _____ de _____ de _____.

Assinatura do participante da pesquisa	Assinatura do Pesquisador

Escala de estresse percebido

ESCALA DE ESTRESSE PERCEBIDO

Itens e instruções para aplicação

As questões nesta escala perguntam sobre seus sentimentos e pensamentos durante o último mês. Em cada caso, será pedido para você indicar o quão frequentemente você tem se sentido de uma determinada maneira. Embora algumas das perguntas sejam similares, há diferenças entre elas e você deve analisar cada uma como uma pergunta separada. A melhor abordagem é responder a cada pergunta razoavelmente rápido. Isto é, não tente contar o número de vezes que você se sentiu de uma maneira particular, mas indique a alternativa que lhe pareça como uma estimativa razoável. Para cada pergunta, escolha as seguintes alternativas:

0= nunca
1= quase nunca
2= às vezes
3= quase sempre
4= sempre

Neste último mês, com que frequência...

1- Você tem ficado triste por causa de algo que aconteceu inesperadamente?
2- Você tem se sentido incapaz de controlar as coisas importantes em sua vida?
3- Você tem se sentido nervoso e “estressado”?
4- Você tem tratado com sucesso dos problemas difíceis da vida?
5- Você tem sentido que está lidando bem as mudanças importantes que estão ocorrendo em sua vida?
6- Você tem se sentido confiante na sua habilidade de resolver problemas pessoais?
7- Você tem sentido que as coisas estão acontecendo de acordo com a sua vontade?
8- Você tem achado que não conseguiria lidar com todas as coisas que você tem que fazer?
9- Você tem conseguido controlar as irritações em sua vida?
10- Você tem sentido que as coisas estão sob o seu controle?
11- Você tem ficado irritado porque as coisas que acontecem estão fora do seu controle?
12- Você tem se encontrado pensando sobre as coisas que deve fazer?
13- Você tem conseguido controlar a maneira como gasta seu tempo?
14- Você tem sentido que as dificuldades se acumulam a ponto de você acreditar que não pode superá-las?

Instrumento de Avaliação de Qualidade de Vida

The World Health Organization Quality of Life – WHOQOL-bref

Instruções

Este questionário é sobre como você se sente a respeito de sua qualidade de vida, saúde e outras áreas de sua vida. Por favor responda a todas as questões. Se você não tem certeza sobre que resposta dar em uma questão, por favor, escolha entre as alternativas a que lhe parece mais apropriada. Esta, muitas vezes, poderá ser sua primeira escolha. Por favor, tenha em mente seus valores, aspirações, prazeres e preocupações. Nós estamos perguntando o que você acha de sua vida, tomando como como referência as duas últimas semanas. Por exemplo, pensando nas últimas duas semanas, uma questão poderia ser:

	nada	Muito pouco	médio	muito	completamente
Você recebe dos outros o apoio de que necessita?	1	2	3	4	5

Você deve circular o número que melhor corresponde ao quanto você recebe dos outros o apoio de que necessita nestas últimas duas semanas. Portanto, você deve circular o número 4 se você recebeu "muito" apoio como abaixo.

	nada	Muito pouco	médio	muito	completamente
Você recebe dos outros o apoio de que necessita?	1	2	3	4	5

Você deve circular o número 1 se você não recebeu "nada" de apoio. Por favor, leia cada questão, veja o que você acha e circule no número e lhe parece a melhor resposta.

		muito ruim	Ruim	nem ruim nem boa	boa	muito boa
1	Como você avaliaria sua qualidade de vida?	1	2	3	4	5
		muito insatisfeito	Insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito

2	Quão satisfeito(a) você está com a sua saúde?	1	2	3	4	5

As questões seguintes são sobre **o quanto** você tem sentido algumas coisas nas últimas duas semanas.

		nada	muito pouco	mais ou menos	bastante	extremamente
3	Em que medida você acha que sua dor (física) impede você de fazer o que você precisa?	1	2	3	4	5
4	O quanto você precisa de algum tratamento médico para levar sua vida diária?	1	2	3	4	5
5	O quanto você aproveita a vida?	1	2	3	4	5
6	Em que medida você acha que a sua vida tem sentido?	1	2	3	4	5
7	O quanto você consegue se concentrar?	1	2	3	4	5
8	Quão seguro(a) você se sente em sua vida diária?	1	2	3	4	5
9	Quão saudável é o seu ambiente físico (clima, barulho, poluição, atrativos)?	1	2	3	4	5

As questões seguintes perguntam sobre **quão completamente** você tem sentido ou é capaz de fazer certas coisas nestas últimas duas semanas.

		nada	muito pouco	médio	muito	completamente
10	Você tem energia suficiente para seu dia a-dia?	1	2	3	4	5
11	Você é capaz de aceitar sua aparência física?	1	2	3	4	5
12	Você tem dinheiro suficiente para satisfazer suas necessidades?	1	2	3	4	5

13	Quão disponíveis para você estão as informações que precisa no seu dia-a-dia?	1	2	3	4	5
14	Em que medida você tem oportunidades de atividade de lazer?	1	2	3	4	5

As questões seguintes perguntam sobre **quão bem ou satisfeito** você se sentiu a respeito de vários aspectos de sua vida nas últimas duas semanas.

		muito ruim	ruim	nem ruim nem bom	bom	muito bom
15	Quão bem você é capaz de se locomover?	1	2	3	4	5
		muito insatisfeito	Insatisfeito	nem satisfeito nem insatisfeito	satisfeito	Muito satisfeito
16	Quão satisfeito(a) você está com o seu sono?	1	2	3	4	5
17	Quão satisfeito(a) você está com sua capacidade de desempenhar as atividades do seu dia-a-dia?	1	2	3	4	5
18	Quão satisfeito(a) você está com sua capacidade para o trabalho?	1	2	3	4	5
19	Quão satisfeito(a) você está consigo mesmo?	1	2	3	4	5
20	Quão satisfeito(a) você está com suas relações pessoais (amigos, parentes,	1	2	3	4	5

	conhecidos, colegas)?					
21	Quão satisfeito(a) você está com sua vida sexual?	1	2	3	4	5
22	Quão satisfeito(a) você está com o apoio que você recebe de seus amigos?	1	2	3	4	5
23	Quão satisfeito(a) você está com as condições do local onde mora?	1	2	3	4	5
24	Quão satisfeito(a) você está com o seu acesso aos serviços de saúde?	1	2	3	4	5
25	Quão satisfeito(a) você está com o seu meio de transporte?	1	2	3	4	5

As questões seguintes referem-se a **com que frequência** você sentiu ou experimentou certas coisas nas últimas duas semanas.

		nunca	Algumas vezes	frequentemente	muito frequentemente	sempre
26	Com que freqüência você tem sentimentos negativos tais como mau humor, desespero, ansiedade, depressão?	1	2	3	4	5

Questionário sócio-demográfico para docentes

QUESTIONÁRIO SÓCIO-DEMOGRÁFICO PARA DOCENTES DOS PROGRAMAS *STRICTO SENSU*

1 Gênero.
1 Masculino
2 Feminino

2 Idade
Pergunta aberta

3 Estado civil
1 Solteiro
2 Casado
3 Divorciado
4 Viúvo

4 Quantos filhos
Pergunta aberta

5 Raça.
1 Negro
2 Branco
3 Pardo
4 Índio
5 Amarelo
6 Prefiro não declarar

6 Nível de formação acadêmica.
1 Mestre
2 Doutor a menos de 5 anos
3 Doutor há mais de 5 anos

7 Tempo de trabalho (em anos) como docente de pós-graduação stricto sensu?
Pergunta aberta

8 Carga horária semanal de trabalho (em horas) na **pós-graduação**?
Pergunta aberta

9 Carga horária na **graduação** (em horas)?
Pergunta aberta

10 Exerce algum cargo de gestão no momento?
1 Sim
2 Não

11 Tipo de vínculo possui na instituição de ensino na qual trabalha?

1 Professor colaborador
2 Professor permanente
3 Professor visitante

12 Trabalha em mais de uma instituição de ensino?
1 Sim
2 Não

13 Em qual estado do Brasil o programa que você atua se situa?
Disponível a opção de todos os estados

14 Qual (is) nível (is) de ensino o programa contempla?
1 Apenas mestrado
2 Apenas doutorado
3 Mestrado e doutorado

15 O programa é público ou privado?
1 Público
2 Privado

16 Qual a nota da avaliação da Capes para o programa no último quadriênio?
1 – Nota 3
2 – Nota 4
3 – Nota 5
4 – Nota 6
5 – Nota 7

17 A qual a área de conhecimento pertence seu programa?
1 Odontologia (Clínica odontológica)
2 Odontologia (Periodontia)
3 Odontologia (Dentística)
4 Odontologia (Patologia bucal)
5 Odontologia (Estomatologia)
3 Odontologia social e preventiva
4 Ortodontia
5 Odontopediatria
6 Cirurgia buco-maxilo-facial
7 Materiais odontológicos
8 Radiologia odontológica
9 Endodontia
10 Outros_____

18 Qual o total da sua produção em Artigos completos Publicados em Periódicos durante toda sua formação acadêmica?
Pergunta aberta

19 Quantas publicações de Artigos Completos Publicados em Periódicos você produziu nos últimos 12 meses?

Pergunta aberta

20 Já realizou algum tipo de tratamento (medicamentoso, terapêutico, etc) devido a problemas relacionados ao trabalho?
1 Sim
2 Não
3 Não me lembro

21 Quantas horas de sono por noite?
Pergunta aberta

22 Costuma dedicar regularmente tempo para lazer?
1 Sim
2 Não

23 Pratica atividade física regularmente?
1 Sim
2 Não

Questionário sócio-demográfico para estudante

QUESTIONÁRIO SÓCIO-DEMOGRÁFICO PARA DISCENTES DOS PROGRAMAS *STRICTO SENSU*

1 Gênero.
1 Masculino
2 Feminino

2 Idade
Pergunta aberta

3 Estado civil
1 Solteiro
2 Casado
3 Divorciado
4 Viúvo

4 Quantos filhos
Pergunta aberta

5 Raça.
1 Negro
2 Branco
3 Pardo
4 Índio
5 Amarelo
6 Prefiro não declarar

6 Nível de formação acadêmica?
1 Cursando mestrado
2 Cursando doutorado

7 Recebe algum tipo de incentivo financeiro para estudo?
1 Sim, bolsa de estudos parcial (não paga mensalidade)
2 Sim, bolsa de estudos integral (não paga mensalidade e adicionalmente recebe quantia em dinheiro)
3 Não

8 Trabalha concomitantemente ao estudo?
1 Sim
2 Não

9 Trabalha em mais de uma instituição de ensino?
1 Sim
2 Não

10 Em qual estado do Brasil o programa que você atua se situa?

Disponível a opção de todos os estados

11 Qual (is) nível (is) de ensino o programa contempla?
1 Apenas mestrado
2 Apenas doutorado
3 Mestrado e doutorado

12 O programa é público ou privado?
1 Público
2 Privado

13 Qual a nota da avaliação da Capes para o programa no último quadriênio?
1 – Nota 3
2 – Nota 4
3 – Nota 5
4 – Nota 6
5 – Nota 7

14 A qual a área de conhecimento pertence seu programa?
1 Odontologia (Clínica odontológica)
2 Odontologia (Periodontia)
3 Odontologia (Dentística)
4 Odontologia (Patologia bucal)
5 Odontologia (Estomatologia)
3 Odontologia social e preventiva
4 Ortodontia
5 Odontopediatria
6 Cirurgia buco-maxilo-facial
7 Materiais odontológicos
8 Radiologia odontológica
9 Endodontia
10 Outros_____

15 Qual o total da sua produção em Artigos completos Publicados em Periódicos durante toda sua formação acadêmica?
Pergunta aberta

16 Quantas publicações de Artigos Completos Publicados em Periódicos você produziu nos últimos 12 meses?
Pergunta aberta

17 Já realizou algum tipo de tratamento (medicamentoso, terapêutico, etc) devido a problemas relacionados ao trabalho?
1 Sim
2 Não
3 Não me lembro

18 Quantas horas de sono por noite?

Pergunta aberta

19 Costuma dedicar regularmente tempo para lazer?
1 Sim
2 Não

20 Pratica atividade física regularmente?
1 Sim
2 Não

Normas para publicação – European Journal of Dental Education

Author Guidelines

Sections
1. Submission
2. Aims and Scope
3. Manuscript Categories and Requirements
4. Preparing the Submission
5. Editorial Policies and Ethical Considerations
6. Author Licensing
7. Publication Process After Acceptance
8. Post Publication
9. Editorial Office Contact Details

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Book

2. Voet D, Voet JG. Biochemistry. New York: John Wiley & Sons; 1990. 1223 p.

Internet document

3. American Cancer Society. Cancer Facts & Figures 2003. http://www.cancer.org/downloads/STT/CAFF2003PWSecured.pdf Accessed March 3, 2003

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Título: Long-term stability of a Class III malocclusion with severe anterior open bite and bilateral posterior crossbite in a hyperdivergent patient.

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18

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