



## Empirical Articles

# Predictors of Burnout Syndrome in Dentistry Students

Fernanda Salloume Sampaio Bonafé<sup>a</sup>, João Maroco<sup>b</sup>, Juliana Alvares Duarte Bonini Campos<sup>\*a</sup>

[a] Departamento de Odontologia Social, Faculdade de Odontologia, Universidade Estadual Paulista, Araraquara, Brasil. [b] Departamento de Ciências Psicológicas, ISPA Instituto Universitário, Lisbon, Portugal.

## Abstract

**Aims:** To estimate the contribution of social support and demographic factors in the development of burnout syndrome in dentistry students. **Method:** A total of 169 Brazilian students participated via internet. For identification of the syndrome, we used the Maslach Burnout Inventory (MBI-SS). Social support was assessed by the Satisfaction with Social Support Scale (ESSS). The validity and reliability of the instruments were estimated. To check the effect of variables on burnout syndrome, linear regression using structural equation modelling (SEM) was performed to estimate causal trajectories ( $\beta$ ).

**Results:** The participants' mean average age was 21.6 (SD = 3.3) years, 64.5% were female and 59.2% were enrolled in private schools. An appropriate adjustment of the instruments' factor models to sample was observed (MBI-SS:  $\chi^2/df = 2.173$ , CFI = .943; GFI = .888; RMSEA = .084; ESSS:  $\chi^2/df = 2.378$ , CFI = .904; GFI = .888; RMSEA = .091). The reliability of the scales was adequate (MBI-SS:  $\alpha = .799-.903$ ; ESSS:  $\alpha = .653-.799$ ). The model explained 33% of the variation of burnout with a significant contribution of social support (ESSS) ( $\beta = -.136$ ,  $p = .042$ ), gender ( $\beta = -.186$ ,  $p = .005$ ), housing ( $\beta = .124$ ,  $p = .050$ ), student performance in the course ( $\beta = -.293$ ,  $p \leq .001$ ) and the thought of quitting the course ( $\beta = .333$ ,  $p \leq .001$ ).

**Conclusion:** Social support and demographic variables may play an important role in the burnout syndrome and therefore should be considered when implementing preventive actions and/or interventions (self-help or guided) in college students.

**Keywords:** occupational health, burnout, social support, psychological adjustment, dentistry

Psychology, Community & Health, 2014, Vol. 3(3), 120–130, doi:10.5964/pch.v3i3.86

Received: 2013-11-28. Accepted: 2014-05-19. Published (VoR): 2014-11-28.

Handling Editor: Maja Furlan de Brito, Psychology & Health Research Unit (UIPES), ISPA - Instituto Universitário, Lisbon, Portugal

\*Corresponding author at: Rua Humaitá, 1680, CEP 14801-903, Araraquara, São Paulo, Brasil. Tel.: (55) 16 3301 6358. E-mail: jucampos@foar.unesp.br



This is an open access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Introduction

There are many studies reporting the presence of sources of stress in the university environment (Seyedfatemi, Tafreshi, & Hagani, 2007; Sreeramareddy et al., 2007). Among these, one can cite the organizational characteristics (few books in the library, inadequate transportation, lack of ergonomic chairs in the classroom), group (relationship with peers and/or teachers, competition) and individual characteristics (test anxiety and/or charges regarding the course, professional concern for the future, lack of time for leisure, family and friends) (Pöhlmann, Jonas, Ruf, & Harzer, 2005; Salanova, Schaufeli, Martinez, & Bresó, 2010). The constant exposure to stressors coupled with the inability to face reality can trigger the burnout syndrome (Beehr & Newman, 1998; Silveira et al., 2005). This syndrome is multifactorial and consists of emotional exhaustion, disbelief, and reduced personal accomplishment (Maslach & Jackson, 1986).

Early research on burnout was only focused on care-related professionals, however, more recently it is noted that the syndrome has affected different occupational areas including health professionals (Bonafé, Trotta, Campos, & Maroco, 2012; Pavlakis, Raftopoulos, & Theodorou, 2010) and college students (Barboza & Beresin, 2007; Campos, Jordani, Zucoloto, Bonafé, & Maroco, 2012; Jordani, Zucoloto, Bonafé, Maroco, & Campos, 2012).

According to Carlotto, Nakamura, and Câmara (2006), students from courses in the health areas are more likely to develop burnout, since, in addition to the usual stressors of the teaching environment there is contact with patients, which often acts as a source of conflicts and problems due to anxiety, fear and insecurity.

The development of burnout syndrome, however, is directly related to the way individuals behave regarding stressors, which may result in a risk or in protection behaviours (Crockett et al., 2007). The perception of stress, the reactions triggered and how they are managed are unique to each individual and depend on the satisfaction with social support (Luo & Wang, 2009; Santos, Pais-Ribeiro, & Lopes, 2003; Seyedfatemi et al., 2007).

The individual's perception of being inserted in a communication network, and acquiring psychological and material resources (such as being supported and loved, esteemed and valued by the people of this network), is known as social support (Maroco, Campos, Vinagre, & Pais-Ribeiro, in press). There are different ways to classify social support, however, there is consensus regarding its multidimensionality and the fact that it has a different impact on different individuals (Maroco et al., in press; Pais-Ribeiro, 1999).

Thus, given the importance that demographic variables and social support may assume, this study was carried out to identify and estimate their contribution to the development of burnout syndrome in dentistry students.

## Method

### Participants

The participants were students enrolled in 2011 in the undergraduate Dentistry course, at both public and private Brazilian higher education institutions, located in the south-eastern region. The invitation to participate was sent to each institution, through an e-mail to the school's Directorate. The institutions' contact information was acquired through the Ministry of Education and Culture's (MEC) webpage (<http://portal.mec.gov.br/index.php>).

A total of 169 students participated in this study, with a mean age of 21.6 years ( $SD = 3.3$ ), and 64.5% were female. As for the course year, 24.8% were enrolled in the first year, 28.6% in the second, 9.3% in the third, 23.6% in the fourth, 9.3% in the fifth, and 4.3% in the sixth year. Of these students, 58.4% were enrolled in private schools and 41.6% in public.

The remaining characteristics of the sample are presented in Table 1.

Table 1

*Demographic Characteristics of the Sample*

Characteristic	<i>n</i> (%)
<b>DEMq1. Did you resort to private teachers?</b>	
Many times	6 (3.6)
Sometimes	16 (9.7)
Never	143 (86.7)
<b>DEMq2. Order of preference of the course at the entrance exam:</b>	
1 <sup>st</sup> option	125 (75.3)
2 <sup>nd</sup> option	38 (22.9)
≥3 <sup>rd</sup> option	3 (1.8)
<b>DEMq3. Regarding your initial expectations this course is:</b>	
Much better	37 (22.6)
Better	75 (45.7)
The same	42 (25.6)
Worse	10 (6.1)
Much worse	-
<b>DEMq4. How do you classify your performance in the course?</b>	
Excellent	28 (17.0)
Good	109 (66.1)
Regular	25 (15.1)
Bad	3 (1.8)
<b>DEMq5. In general terms, how would you classify your professors?</b>	
Very competent	46 (27.7)
Competent	100 (60.3)
Reasonable	16 (9.6)
Incompetent	3 (1.8)
Very incompetent	1 (0.6)
<b>DEMq6. In general terms, how would you classify the conditions (facilities) of your school?</b>	
Very good	44 (26.7)
Good	86 (52.1)
Reasonable	31 (18.8)
Bad	4 (2.4)
Very bad	-
<b>DEMq7. Who do you live with?</b>	
Alone	39 (23.4)
Family	67 (40.1)
Friends, colleagues	61 (36.5)
<b>DEMq8. Who mostly finances your studies?</b>	
You	6 (3.7)
Family	149 (90.8)
Studentship	9 (5.5)

Characteristic	<i>n</i> (%)
<b>DEMq9. Did you need to take any medication due to your studies?</b>	
Frequently	15 (9.1)
Sometimes	57 (34.8)
Never	92 (56.1)
<b>DEMq10. Have you thought of quitting the course?</b>	
Frequently	11 (6.6)
Sometimes	39 (23.2)
No	118 (70.2)

Note. DEMqn = Demographic variable with corresponding serial number.

It is important to clarify that not all students answered all questions.

Most students reported that the course is better than their initial expectations; they positively rate their performance in the course, the teachers and the physical conditions of the university. Although most reported not taking medication or thinking about quitting the course, it is important to highlight that these behaviours were present in 43.9% and 29.8% of students, respectively.

### Study Variables and Instruments

To characterize the study population demographic information was collected.

To identify the presence of burnout syndrome the Maslach Burnout Inventory - Students version (MBI-SS) (Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002) was used. This is the most commonly employed instrument for burnout assessment in the international literature. It is a three-dimension (Emotional Exhaustion, Disbelief, and Low Professional Effectiveness) self-completion questionnaire, consisting of 15 questions, with answers given on a 7-point Likert-type scale (0: *never*, 6: *always*). In this study we used the Portuguese version of the instrument validated for the university students' population by Campos and Maroco (2012).

To assess the individuals' satisfaction regarding their social support we used the Portuguese version of the Satisfaction with Social Support Scale (ESSS) (Pais-Ribeiro, 1999), validated for college students by Maroco et al. (in press). It is a self-completion instrument, comprised by 15 phrases divided into 4 factors (Satisfaction with friendships, Intimacy, Satisfaction with family and Social activity), and the respondents must indicate the extent to which they agree with each statement on a 5-point Likert scale (1: *strongly agree*, 5: *strongly disagree*).

### Procedures

The instruments used in the study were placed on a website, developed by the researchers resorting to google-docs, for a three-month period. The link to access the questionnaire was sent to the e-mails of the institutions registered with the Ministry of Education. The institutions that agreed to participate forwarded the e-mail to their students. It should be noted that this methodology has been tested and validated by the researchers in a previous study (Campos, Zucoloto, Bonafé, Jordani, & Maroco, 2011).

### Data Analysis

To assess the adequacy of the factor models to the sample, for each instrument independently, a confirmatory factor analysis was performed using as goodness of fit indices the ratio chi-square by the degrees of freedom

( $\chi^2/df$ ), Comparative fit index (CFI), Goodness of fit index (GFI), and Root mean square error of approximation (RMSEA). Internal consistency was estimated by standard Cronbach's alpha coefficient ( $\alpha$ ).

We developed a second-order hierarchical model (SOHM) of each scale, estimating the standardized regression weights of the sub-constructs ( $\beta$ ) in order to assert an overall score for the variables Burnout and Social Support. From these models, we obtained the standardized factor weights that enabled the formulation of an algorithm, which allowed the development of a final score for each latent variable.

To verify the effect of social support and demographic variables on the burnout syndrome, a multivariate regression model was developed to estimate the parameters through the maximum likelihood method, using AMOS (v.19, IBM SPSS Statistics, Chicago, IL).

The existence of outliers was assessed by the Mahalanobis squared distance ( $D^2$ ). Normality was estimated by the coefficients of skewness and kurtosis, and no severe violations to the normal distribution were observed (Maroco, 2010). Multicollinearity was assessed through the VIF statistic (Maroco, 2010), and it was not observed among the study variables. The level of significance was set at 5%.

### Ethical Aspects

The questionnaires were not identified and only individuals who gave their consent participated in the research. The subjects were informed that their participation was voluntary and anonymous. The development of this study was approved by the Ethics Committee on Human Research of the Faculty of Pharmaceutical Sciences - UNESP (CEP FCF 01/2011).

## Results

The fit indices of the factorial structures of the instruments and the proposed second-order model are presented in Table 2.

Table 2

*Factor Weights/Structural Coefficients ( $\lambda/\beta$ ) and Goodness of Fit Indices of the Factor Models of the Instruments Used*

Instruments	$\lambda/\beta$	$\chi^2/df$	CFI	GFI	RMSEA	$\alpha$
MBI-SS <sup>a</sup>	.53-.96	2.173	.943	.888	.084	.799-.903
ESSS <sup>b</sup>	.51-.96	2.378	.904	.888	.091	.653-.799
<b>Second-order model</b>						
Burnout	.56-1.00	2.173	.943	.888	.084	-
Satisfaction with social support	.46-1.00	2.211	.899	.878	.085	-

Note. <sup>a</sup>MBI-SS: Maslach Burnout Inventory. <sup>b</sup>ESSS: Satisfaction with Social Support Scale.

An appropriate fit of the factor models and internal consistency of the four instruments were observed. However, for the adjustment to be adequate it was necessary to remove item 9 of MBI-SS' Disbelief dimension, and item 15 of ESSS' Social Activities dimension, for presenting factor weights < .50.

Table 3 presents the linear regression model between social support and the demographic variables on burnout syndrome.

Table 3

*Linear Regression Between Social Support, Obtained From the Second-Order Hierarchical Model, and Between the Demographic Variables with Burnout*

Variable	$\beta$	<i>B</i>	<i>SE</i>	<i>p</i>	$r^{2,b}$
<b>Demographic</b>					.37
Gender	-.191	-.477	.159	.005	
Age	-.110	-.037	.025	.142	
Course semester	.117	.047	.031	.124	
Type of school (public, private)	-.015	-.033	.178	.851	
DEMq1	.038	.093	.157	.552	
DEMq2	-.070	-.164	.152	.282	
DEmq3	.066	.086	.097	.374	
DEMq4	-.281	-.499	.133	<.001	
DEMq5	-.096	-.155	.119	.194	
DEMq6	-.022	-.034	.110	.761	
DEMq7	.142	.174	.170	.027	
DEMq8	.029	.110	.249	.659	
DEMq9	.027	.045	.121	.706	
DEMq10	.366	.677	.144	<.001	
ESSS <sup>a</sup>	-.097	-.117	.085	.170	

Note. <sup>a</sup>ESSS: Satisfaction with Social Support Scale. <sup>b</sup>Burnout variability explained by the variables.

The proposed model explains 37% of the variation in Burnout, with a significant contribution of the variables gender, performance (DEMq4), housing (DEMq7) and thought of quitting the course (DEMq10).

The definition of the final regression model was established step-by-step. First, the variables with  $p < .20$  were removed from the model. The variables semester, DEMq5 (teachers' classification), age, and ESSS remained non-significant. Then, we removed those that presented the highest  $p$ -values (DEMq5 and age). Finally, the variable semester remained non-significant, and was removed from the analysis.

Figure 1 shows the linear regression model including social support, and the demographic variables considered significant to explain the burnout syndrome.

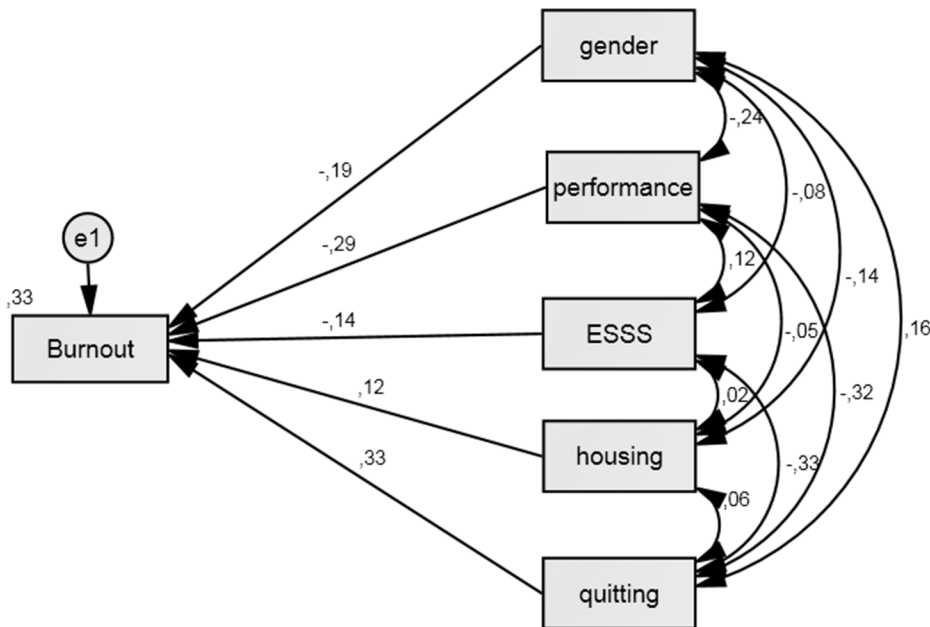


Figure 1. Linear Regression Between Social Support and Demographic Variables Considered Significant, with the Standardized Estimates of the Model's Coefficients ( $p < .05$ ).

The variables included in the model explained 33% of the variation in Burnout, with a significant contribution of the variables gender ( $p = .005$ ), performance in the course (DEMq4) ( $p < .001$ ), ESSS ( $p = .042$ ), housing ( $p = .050$ ) and thought of quitting the course (DEMq10) ( $p < .001$ ). Women were the most affected by burnout syndrome, with a poor performance, less social support, living alone and thinking about quitting the course.

## Discussion

The university environment has characteristics that can act as a source of stress, and a constant exposure can trigger symptoms related to the burnout syndrome (Carlotto et al., 2006; Jordani et al., 2012). Studies such as those by Folkman and Lazarus (1980) and Carver, Scheier, and Weintraub (1989) claim that individual, behavioural/social and demographic factors, are fundamental and decisive for adaptation and perception of stressors and, therefore, should be considered.

In this way, the development of this work is interesting given that it contributes to the understanding of the variables related to the development of burnout syndrome in dentistry students, which can provide input for preparation of educational and preventive strategies more directed and adequate.

In this study, we observed a significant relation between the syndrome onset and the students' gender. However, this relation is not consensual in the literature. Divaris, Lai, Polychronopoulou, Eliades, and Katsaros (2012), found a higher level of burnout among female dentists in Switzerland; while Alemany Martínez, Berini Aytés, and Gay Escoda (2008) found a higher prevalence of burnout among male dentistry students in Spain. Backović, Živojinović, Maksimović, and Maksimović (2012) found no statistically significant differences between gender and burnout in medical students of Serbia. However, it is important to note that the comparison between the results from different

studies must be made with caution, since the different individual and sociocultural characteristics between samples should be considered.

A significant relationship between performance in the course and burnout points to a greater impact on students whose performance is bad, which can be explained by the fact that these course-related activities are more wearing for these students (Campos et al., 2012). The thought of quitting the course was also significantly related to burnout.

Students who live alone had higher burnout scores. One can speculate that this fact is related to the increased sense of insecurity, not having company and/or being away from the protection of the family environment (Humphris et al., 2002).

The negative relationship between satisfaction with social support and burnout (Table 2) had already been reported by Halbesleben (2006) and Yildirim (2008). Pais-Ribeiro (1999) stresses the positive role of social support when facing a crisis, resulting in the protection of the individual against the deleterious effects of stress.

To measure the social support variable, one should take into account its latent nature, i.e., it is not directly measurable. Thus, it is necessary to evaluate the psychometric properties of the measuring instruments before their use, to attest to the reliability and validity of the information obtained. In our study we observed an acceptable psychometric quality of the instruments in this sample, after the removal of some items. It is important to highlight that this concern, although not commonly presented in the literature, should exist in all works using scales, since the properties of the instruments depend on the study sample (Campos et al., 2011).

Moreover, it is important to note that when using latent variables as manifest variables, by means of regression models, an attenuation of regression coefficients is obtained, but this attenuation is lower the greater the reliability (internal consistency) of the constructs. Considering that the constructs assessed (satisfaction with social support and burnout) presented good internal consistency, the possible attenuation of the regression coefficients was reduced, ensuring the quality of the estimate of the regression model.

Another important fact is the lack of consensus in the literature on the establishment of cut-off points for the classification of social support and burnout syndrome. Based on the knowledge that the theoretical conceptualization of these variables predicts the existence of a global latent state, and that the factors that compose the different scales have significant correlations among themselves, it is understood that the inclusion of a second order factor (SOHM) creates the possibility of estimating an overall score for each scale (Maroco, 2010). Thus, although this is not an analysis commonly used in dentistry literature, mainly because of its specificity and complexity, it is a widely accepted strategy in the psychometric literature and, therefore, it was the one used in this study.

The adjusted model (Figure 1) explained 33% of the variation in burnout, which on one hand provides information on the characteristics that must be considered in the study of burnout, and on the other points to the need to identify other variables that may influence the development of the syndrome among dentistry students, as for example, those directly related to the academic context.

We further suggest that more studies are conducted with the goal of integrating in the model individual, behavioural and/or psychosocial variables that may be associated to the development of burnout syndrome both in dentistry students, and in students from other areas.



We can conclude that social support and demographic variables played an important role in the burnout syndrome in dentistry students and therefore should be considered when implementing preventive actions and/or self-help/professionally guided interventions in college students. Satisfaction with social support, gender, housing, student performance and the thought of giving up the course determined 33% of the variability of the burnout scores.

### Funding

The authors thank the grant #2010/16346-5, São Paulo Research Foundation (FAPESP).

### Competing Interests

The authors have declared that no competing interests exist.

### Acknowledgments

The authors have no support to report.

## References

- Alemayn Martínez, A., Berini Aytés, L., & Gay Escoda, C. (2008). The burnout syndrome and associated personality disturbances: The study in three graduate programs in Dentistry at the University of Barcelona. *Medicina Oral, Patología Oral y Cirugía Bucal*, 13(7), E444-E450.
- Backović, D. V., Živojinović, J. I., Maksimović, J., & Maksimović, M. (2012). Gender differences in academic stress and burnout among medical students in final years of education. *Psychiatria Danubina*, 24(2), 175-181.
- Barboza, J. I. R. A., & Beresin, R. (2007). A síndrome de burnout em graduandos de enfermagem. *Einstein*, 5(3), 225-230.
- Beehr, T. A., & Newman, J. E. (1998). Research on occupational stress: An unfinished enterprise. *Personnel Psychology*, 51(4), 835-844. doi:10.1111/j.1744-6570.1998.tb00741.x
- Bonafé, F. S. S., Trotta, O. S. T., Campos, J. A. D. B., & Maroco, J. (2012). Síndrome de burnout em dentistas do serviço público. *Psychology, Community & Health*, 1(1), 56-67. doi:10.5964/pch.v1i1.7
- Campos, J. A. D. B., Jordani, P. C., Zucoloto, M. L., Bonafé, F. S. S., & Maroco, J. (2012). Síndrome de burnout em graduandos de Odontologia. *Revista Brasileira de Epidemiologia*, 15(1), 155-165. doi:10.1590/S1415-790X2012000100014
- Campos, J. A. D. B., & Maroco, J. (2012). Adaptação transcultural Portugal-Brasil do inventário de burnout de maslach para estudantes. *Revista de Saude Publica*, 46(5), 816-824. doi:10.1590/S0034-89102012000500008
- Campos, J. A. D. B., Zucoloto, M. L., Bonafé, F. S. S., Jordani, P. C., & Maroco, J. (2011). Reliability and validity of self-reported burnout in college students: A cross randomized comparison of paper-and-pencil vs. online administration. *Computers in Human Behavior*, 27(5), 1875-1883. doi:10.1016/j.chb.2011.04.011
- Carlotto, M. S., Nakamura, A. P., & Câmara, S. G. (2006). Síndrome de burnout em estudantes universitários da área da saúde. *Psico-USF*, 37(1), 57-62.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267-283. doi:10.1037/0022-3514.56.2.267

- Crockett, L. J., Iturbide, M. I., Torres Stone, R. A., McGinley, M., Raffaelli, M., & Carlo, G. (2007). Acculturative stress, social support, and coping: Relations to psychological adjustment among Mexican American college students. *Cultural Diversity & Ethnic Minority Psychology, 13*(4), 347-355. doi:10.1037/1099-9809.13.4.347
- Divaris, K., Lai, C. S., Polychronopoulou, A., Eliades, T., & Katsaros, C. (2012). Stress and burnout among Swiss dental residents. *Schweizer Monatsschrift fur Zahnmedizin, 122*(7-8), 610-615.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 21*(3), 219-239. doi:10.2307/2136617
- Halbesleben, J. R. B. (2006). Sources of social support and burnout: A meta-analytic test of the conservation of resources model. *Journal of Applied Psychology, 91*(5), 1134-1145. doi:10.1037/0021-9010.91.5.1134
- Humphris, G., Blinkhorn, A., Freeman, R., Gorter, R., Hoad-Reddick, G., Murtomaa, H., & Splieth, C. (2002). Psychological stress in undergraduate dental students: Baseline results from seven European dental schools. *European Journal of Dental Education, 6*(1), 22-29. doi:10.1034/j.1600-0579.2002.060105.x
- Jordani, P. C., Zucoloto, M. L., Bonafé, F. S. S., Maroco, J., & Campos, J. A. D. B. (2012). Aspetos da vida universitária e a síndrome de burnout. *Psychology, Community & Health, 1*(3), 246-256. doi:10.5964/pch.v1i3.17
- Luo, Y., & Wang, H. (2009). Correlation research on psychological health impact on nursing students against stress, coping way and social support. *Nurse Education Today, 29*, 5-8. doi:10.1016/j.nedt.2008.05.019
- Maroco, J. (2010). *Análise de equações estruturais*. Lisbon, Portugal: ReportNumber.
- Maroco, J., Campos, J. A. D. B., Vinagre, M. G., & Pais-Ribeiro, J. L. (in press). Adaptação Transcultural Brasil-Portugal da Escala de Satisfação com o Suporte Social para Estudantes Universitários. *Psicologia: Reflexão e Crítica, 27*(2).
- Maslach, C., & Jackson, S. E. (1986). *Maslach Burnout Inventory manual*. Palo Alto, CA: Consulting Psychologists Press.
- Pais-Ribeiro, J. L. (1999). Escala de Satisfação com o Suporte Social (ESSS). *Análise Psicológica, 3*(17), 547-558.
- Pavlakis, A., Raftopoulos, V., & Theodorou, M. (2010). Burnout syndrome in Cypriot physiotherapists: A national survey. *BMC Health Services Research, 10*, Article 63. doi:10.1186/1472-6963-10-63
- Pöhlmann, K., Jonas, I., Ruf, S., & Harzer, W. (2005). Stress, burnout and health in the clinical period of dental education. *European Journal of Dental Education, 9*(2), 78-84. doi:10.1111/j.1600-0579.2004.00359.x
- Salanova, M., Schaufeli, W., Martinez, I., & Breso, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety, Stress, and Coping, 23*(1), 53-70. doi:10.1080/10615800802609965
- Santos, C. S. V. B., Pais-Ribeiro, J. L., & Lopes, C. (2003). Estudo de adaptação da escala de satisfação com o suporte social (ESSS) a pessoas com diagnóstico de doença oncológica. *Psicologia, Saúde & Doenças, 4*(2), 185-204.
- Schaufeli, W. B., Martínez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology, 33*(5), 464-481. doi:10.1177/0022022102033005003
- Seyedfatemi, N., Tafreshi, M., & Hagani, H. (2007). Experienced stressors and coping strategies among Iranian nursing students. *BMC Nursing, 6*, Article 11. doi:10.1186/1472-6955-6-11

- Silveira, N. M., Vasconcellos, S. J. L., Cruz, L. P., Kiles, R. F., Silva, T. P., Castilhos, D. G., & Gauer, G. J. C. (2005). Avaliação de burnout em uma amostra de policiais civis. *Revista de Psiquiatria do Rio Grande do Sul*, 27(2), 159-163. doi:10.1590/S0101-81082005000200006
- Sreeramareddy, C. T., Shankar, P. R., Binu, V. S., Mukhopadhyay, C., Ray, B., & Menezes, R. G. (2007). Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Medical Education*, 7, Article 26. doi:10.1186/1472-6920-7-26
- Yildirim, I. (2008). Relationships between burnout, sources of social support and sociodemographic variables. *Social Behavior and Personality*, 36(5), 603-616. doi:10.2224/sbp.2008.36.5.603