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Síndrome de Burnout e consumo de álcool em estudantes de Odontologia

| Burnout Syndrome and alcohol consumption in dental students

RESUMO | Introdução: *A Síndrome de Burnout ocorre como resultado de estresse crônico relacionado ao trabalho e pode ser caracterizada por altos níveis de exaustão emocional, descrença e baixa eficácia profissional. Em uma tentativa para superar essa dificuldade, o consumo de álcool e o uso de drogas psicotrópicas podem ser frequentes.* **Objetivo:** *Identificar a prevalência da Síndrome de Burnout e risco de alcoolismo e avaliar o poder preditivo das três dimensões de Burnout no padrão de consumo de álcool entre estudantes de odontologia.* **Métodos:** *Participaram 284 estudantes. Como instrumento de medida foram utilizados um questionário sociodemográfico, o Inventário de Burnout de Maslach – versão estudantes (MBI-SS) e o Teste de Identificação de Desordens devido ao uso de Álcool (AUDIT). As prevalências do padrão de consumo de álcool e da síndrome de burnout foram estimadas (IC95%). Foi realizada regressão ordinal para predizer o impacto das três dimensões de Burnout no padrão de consumo de álcool.* **Resultados:** *A prevalência da síndrome foi 0,7% (IC95% = 0,0 - 1,7). A maioria dos estudantes consome bebidas alcoólicas frequentemente (89,4%; IC95% = 85,8 - 93,0). Observou-se alta prevalência do padrão de beber de risco (27,4%; IC95% = 22,2 - 32,6). O modelo de regressão ordinal foi estatisticamente significativo (G²(4) = 38,5; p < 0,01). Com o aumento da exaustão, a probabilidade de se observar o alto padrão de consumo aumentou 37,2% (OR = 1,4; p < 0,01). A probabilidade de se observar o alto padrão de consumo diminuiu 33,7% com o aumento da eficácia profissional (OR = 0,8; p=0,02). Conclusão: Os resultados sugerem uma relação direta entre as dimensões da síndrome e o padrão de consumo de álcool.*

Palavras-chave | *Alcoolismo; Esgotamento profissional; Estudantes; Odontologia; Saúde coletiva.*

ABSTRACT | Introduction: Burnout syndrome occurs as a result of chronic work-related stress and it can be characterized by high levels of emotional exhaustion, cynicism and low professional efficacy. To deal with such emotionally onerous situations, workers may resort to alcohol consumption and the use of psychotropic drugs. **Objective:** Identify the prevalence of the burnout syndrome and risk of alcoholism and to evaluate the predictive power of the three Burnout dimensions in the alcohol consumption behavior among dental students. **Methods:** A total of 284 students participated. The instruments used included a sociodemographic questionnaire, the Maslach Burnout Inventory - student version (MBI-SS) and the Alcohol Use Disorders Identification Test (AUDIT). Prevalence rates of drinking patterns and Burnout syndrome were estimated (CI95%). Ordinal regression was performed to predict the impact of the three dimensions of burnout on the pattern of alcohol consumption. **Results:** The prevalence of burnout syndrome was 0.7% (CI95% =0.0 - 1.7). Most students consume alcohol frequently (89.4%; CI95% = 85.8 - 93.0). There was a high prevalence of a risky drinking pattern (27.4%; CI95% = 22.2 - 32.6). The ordinal regression model was statistically significant (G²(4) = 38.5; p<0.01). As the Exhaustion increased, the probability of observing higher drinking behavior increased 37.2% (OR = 1.4; p<0.01). Regarding professional efficacy, the probability of observing higher drinking behavior decreased 33.7% with increasing professional efficacy (OR = 0.8; p = 0.02). **Conclusion:** The results suggest a direct relationship between the dimensions of burnout syndrome and alcohol consumption behavior.

Keywords | Alcoholism; Professional burnout; Students; dentistry; Public health.

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INTRODUCTION|

Burnout syndrome, occurs as a result of chronic work-related stress and, according to Maslach and Jackson[1], it may be characterized by high levels of emotional exhaustion, cynicism or cynicism toward work, together with a sense of low professional efficacy.

The first reactions to work-related stress include feelings of exhaustion, weariness, mental and physical overload and relationship difficulties. Cynicism seems to be an attempt to protect oneself from exhaustion, leading workers to become more distant and cold toward work and their colleagues, since they feel it is safer to be indifferent towards everyday situations. This distance , in turn, leads to feelings of low efficacy, i.e., professionals lose confidence in their own ability to work and the positive impact of their efforts.

Moreover, several studies have pointed that in trying to deal with this process, burnout victims may experience relationship difficulties in the workplace, within the family and with friends. To mitigate these problems, they may resort to frequent/excessive alcohol consumption and the use of psychotropic drugs [2-5].

According Cunradi et al.[3], a limited number of studies have examined the association between burnout and alcohol consumption. Nowack and Pentkowski[6] studied 879 female dentists and found a higher consumption of substances such as alcohol, tobacco and illicit drugs in women with higher levels of depersonalization. Cunradi et al.[3] found a positive relationship between emotional exhaustion and depersonalization, and alcohol consumption in a sample of American human services workers. Studies focusing on undergraduate students are even scarcer. The evidence available supports the hypothesis of increased consumption of alcohol in response to stress[3, 7, 8].

This study aim at identifying the prevalence of burnout syndrome and the risk of alcoholism and evaluating the contribution of the exhaustion, cynicism, professional efficacy and gender as predictors of the alcohol consumption behavior among Dental students.

METHODS|

The sociodemographic variables collected to characterize the sample were as such: gender, age, years of study, performance in the course, housing, number of people they lived with, and alcohol consumption by parents and best friends.

The economic and educational status of the head of household were classified according to the "Critério Brasil"[9] proposed by the Brazilian Association of Research Companies.

The assessment of the burnout syndrome was performed using the Maslach Burnout Inventory - students version (MBI-SS), composed by three dimensions (exhaustion: items 1 to 5, cynicism: items 6 to 9 and professional efficacy: items 10 to 15), validated for Brazilian university students by Campos and Maroco[10].

For the identification of disorders derived from alcohol consumption, we used the AUDIT (Alcohol Use Disorders Identification Test), developed by the World Health Organization (WHO)[11], which is composed by three dimensions (Frequency of alcohol consumption: items 1 to 3; Symptoms: items 4 to 6; and Consequences: items 7 to 10). In this study, we used the Brazilian version of the AUDIT, adapted by Mendéz[12].

The drinking behavior of each individual was classified using an adaptation proposed by Babor et al.[11], who considers the sum of the points obtained in each question of the AUDIT (0 = Abstemious; 1 to 7 = moderate drinking; 8 to 15 = risky drinking; 16 19 = high risk drinking; and, 20 to 40 = possible alcohol dependence).

This study was approved by the Ethics Committee of the School of Dentistry at UNESP, in the city of Araraquara (Protocol 30/10) and only students who signed the Informed and Free Consent Form participated.

The questionnaires were not identified and were applied by an examiner, in a classroom, in regular school hours, previously scheduled with the teacher in charge of the course given at the time of application.

All the enrolled undergraduate Dentistry students in 2012 at UNESP university (n = 375) were invited to participate.

Students were informed of the importance of responding to the questionnaires seriously.

To estimate the psychometric characteristics of the instruments (MBI-SS and AUDIT), psychometric sensitivity was first assessed through central tendency, dispersion and shape measures (skewness (Sk) and kurtosis (Ku)). Construct validity was assessed through factorial, convergent and discriminant validity. A confirmatory factor analysis was performed and the goodness-of-fit evaluated with following indexes: chi-square statistic divided by its degrees of freedom (c^2/df), comparative fit index (CFI), goodness of fit index (GFI) and mean square root error of approximation (RMSEA). The model was considered acceptable when $c^2/df < 5.00$, CFI and GFI > 0.90 and RMSEA < 0.10[13]. The convergent validity of the factors was assessed by the average variance extracted (AVE) for each factor, and the construct reliability through the composite reliability (CR), which was considered adequate if ≥ 0.50[13]. Discriminant validity was analyzed considering the AVE for each factor and the square of the Pearson correlation (r^2) among the factors. When AVE was higher than the r^2, we considered that the data obtained by the respective factors had discriminant validity. Internal consistency was estimated by Cronbach's standard alpha coefficient (α). Values of a > 0.70 were indicative of acceptable internal consistency[14].

To estimate the prevalence of burnout, we followed the recommendation put forward by Maslach & Jackson[15], who state that the presence of the syndrome would be detected when an individual has an exhaustion and cynicism score over the 66th percentile (P66), along with a mean score of professional efficacy below the 33rd percentile (P33) in this scale (scores ranging from 0 to 6). The distribution of subjects according to risk of alcoholism classification was also ascertained.

Estimates were performed by point and 95% confidence interval (CI95%).

To assess whether the scores of exhaustion, cynicism, professional efficacy and gender had a significant effect on the classification of individuals regarding the alcohol intake behavior, we resorted to the ordinal regression, using the maximum likelihood estimator with the logit link function. The assumption of the homogeneity-of-slopes model was validated ($c_{LP}^2(12) = 17.3$; p = 0.10). We calculated the odds ratio (OR) of developing risky drinking behavior according to the components of burnout (exhaustion, cynicism and professional efficacy) and gender. For decision making, a significance level of 5% was adopted.

RESULTS |

A total 284 dental students agreed to participate. 71.0% were female and compliance rate was 75.7%. Of these students, 65 (23.0%) were enrolled in the first year of the course, 58 (20.5%) in the second year, 47 (16.7%) in the third year, 65 (23.0%) in the fourth year, and 48 (17.0%) in the fifth year. The mean age was 21.2 (SD=2.1) years, and live with a mean of 3.7 people (SD=2.0). Regarding the economic status, 159 (56.0%) students belonged to the upper class and upper middle-class, 114 (40.1%) to the middle class, and only 11 (3.9%) to lower middle class and poorer. Regarding performance in the course, 1.4% of the participants found it to be poor, 21.4% acceptable, 69.2% good, and 8.0% excellent. Regarding the social support network, 56.4% reported living with friends/colleagues, 20.9% with family, and 22.7% lived alone. Of the participants, 71.1% reported that their parents consume alcoholic beverages and 84.0% stated that their best friend consumes alcohol regularly

It should be stressed that 23.5% of the students reported drinking alcohol 2-4 times a week, with 33.8% reported consuming 5 to 10 doses of alcohol when they drink, and 14.0% reporting that in the previous year they were hurt by another person or they harmed someone due to alcohol intake (Table 1).

All items of the AUDIT presented skewness and kurtosis values close to those of the normal distribution, except for item 6 (Ku = 100.5; Sk = 9.7). All items on the MBI-SS presented adequate values for skewness and kurtosis, which indicates no severe violation of normality.

The three-factor structure of the AUDIT showed an adequate fit to the sample data ($c^2/df = 2.46$, CFI = 0.97, GFI = 0.95, RMSEA = 0.07; l = 0.53 to 0.96), as well as an adequate convergent validity on the dimensions Frequency (AVE = 0.75, CR=0.90) and Consequences (AVE=0.50, CR=0.73), but limited convergent validity in Symptoms dimension (AVE=0.30, CC=0.86). The discriminant validity was adequate, being compromised only in the Symptoms dimension ($r^2 = 0.32$ to 0.36). The internal consistency was found to be acceptable for the dimensions

Table 1 - Distribution of the students response to the Alcohol Use Disorders Identification Test - AUDIT. Araraquara, 2012

AUDIT - Question	A	B	C	D	E	Total
*1. How often do you have a drink containing alcohol?	30(10.6)	56(19.7)	131(46.1)	60(21.1)	7(2.5)	284(100.0)
*2. How many drinks containing alcohol do you have on a typical day when you are drinking?	94(33.5)	91(32.5)	55(19.6)	23(8.2)	17(6.0)	280(100.0)
***3. How often do you have six or more drinks on one occasion?	112(40.2)	71(25.5)	41(14.7)	45(16.1)	9(3.2)	278(100.0)
***4. How often during the last year have you found that you were not able to stop drinking once you had started?	213(76.3)	35(12.5)	14(5.0)	4(1.4)	13(4.6)	279(100.0)
***5. How often during the last year have you failed to do what was normally expected from you because of drinking?	183(65.3)	65(23.2)	23(8.2)	9(3.2)	.	280(100.0)
***6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	275(98.2)	2(0.71)	1(0.3)	1(0.3)	1(0.3)	280(100.0)
***7. How often during the last year have you had a felling of guilt or remorse after drinking?	173(61.5)	72(25.6)	26(9.2)	10(3.5)	.	281(100.0)
***8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	173(61.7)	69(24.6)	29(10.3)	7(2.5)	2(0.71)	280(100.0)
****9. Have you or someone else been injured as a result of your drinking?	202(71.8)	.	39(13.8)	.	40(14.2)	281(100.0)
****10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?	247(88.2)	.	12(4.2)	.	21(7.5)	280(100.0)

*A: never, B: once a month or less, C: 2 to 4 times per month, D: 2 to 3 times per week, E: 4 ou more times per week. **A: 1 or 2 "doses", B: 3 or 4 "doses", C: 5 or 6 "doses", D: 7 to 9 "doses", E: 10 or more "doses". ***A: never, B: less than monthly, C: monthly, D: weekly, E: daily or almost daily. ****A: no, C: yes, but not in the past year, E: yes, during the past year.

Frequency (a = 0.89) and Consequences (a = 0.73), but it was compromised for the Symptoms dimension (a = 0.49).

To obtain an adequate fit of the MBI-SS to the data it was necessary to remove item 10, since it had a low factor weight (l = 0.40). After this, the model showed acceptable fit to the sample (c^2/df = 3.24, CFI = 0.92, GFI = 0.89, RMSEA = 0.09; l = 0.52 to 0.97; a = 0.83 to 0.86), adequate convergent validity (exhaustion: AVE = 0.56, CR = 0.86; cynicism: AVE = 0.63, CR = 0.87; professional efficacy: AVE = 0.50, CR = 0.83) and discriminant validity (AVEs > ϱ^2 = 0.05 to 0.23). Internal consistency was adequate in all three dimensions of the MBI-SS exhaustion (a = 0.86), cynicism (a = 0.87) and professional efficacy (a = 0.83).

We detected a high prevalence of individuals with a drinking pattern above moderate, with possible alcohol dependence. This pattern was significantly more prevalent among male students (Table 2).

Regarding the MBI-SS, there was a high prevalence of students who reported feeling exhausted after facing a day of study (82.0%) and who said that studying required a great effort (47.7%), varying their responses from "regularly" to "always" (questions 2 and 4). Another finding worth mentioning is that approximately 14.0% of the students "always" wonder about the meaning and importance of their studies (question 9).

The prevalence of burnout in the sample was 0.7% (CI95% =0,0 - 1,7), 31.7% of exhaustion (CI95% = 26,3 - 37,1), 8.4% of cynicism (CI95% = 5,2 - 11,6) and 3.9% of low professional efficacy (CI95% = 1,6 - 6,2). The mean score of emotional exhaustion among the participants was 3.2 (SD = 1.2), of cynicism 1.6 (SD = 1.4), and of professional efficacy 4.4 (SD = 1.1).

The regression model was statistically significant (G^2(4) = 38.50, p < 0.01).

Table 2 - Distribution by point estimate and 95% confidence intervals (CI95%) of participants according to the alcohol consumption pattern. Araraquara, 2012

Drinking behavior	Total Sample n(%)	% CI95%	Male n(%)	% CI95%	Female n(%)	% CI95%
Abstemious	26(9.2)	5.9-12.6	7(9.0)	2.6-15.4	19(9.4)	5.4-13.4
Moderate drinking	142(50.5)	44.7-56.4	25(32.1)	21.6-42.5	117(57.6)	50.8-64.4
Risky drinking pattern	77(27.4)	22.2-32.6	27(34.6)	24.0-45.2	50(24.6)	18.7-30.6
High risk drinking pattern	17(6.1)	3.3-8.8	7(9.0)	2.6-15.4	10(4.9)	2.0-7.9
Possible achool dependence	19(6.8)	3.8-9.7	12(15.4)	7.3-23.4	7(3.4)	0.9-6.0
Total	**281(100.0)**	**-**	**78(100.0)**	**-**	**203(100.0)**	**-**

Table 3 - Mean scores exhaustion, cynicism and professional efficacy of the participants according to the drinking pattern and gender. Araraquara, 2012

Alcohol drinking pattern	Female n	Male n	Exhaustion Female mean±sd	Exhaustion Male mean±sd	Exhaustion Total	Cynicism Female mean±sd	Cynicism Male mean±sd	Cynicism Total	Professional Efficacy Female mean±sd	Professional Efficacy Male mean±sd	Professional Efficacy Total
Abstemious	19	7	3,12±1,22	2,30±1,06	2,93±1,22	1,18±1,12	0,75±1,30	1,07±1,16	4,56±1,29	5,02±0,67	4,68±1,16
Moderate drinking	117	25	3,14±1,30	2,84±1,24	3,08±1,29	1,35±1,23	2,14±1,87	1,49±1,39	4,53±1,06	4,23±1,09	4,47±1,07
Risky drinking pattern	50	27	3,43±1,21	3,24±0,86	3,36±1,10	1,66±1,38	1,62±1,27	1,65±1,33	4,32±0,89	4,05±1,13	4,23±0,98
High risk drinking pattern	17	19	4,31±0,98	3,27±1,21	3,76±1,21	2,34±1,52	1,79±1,52	2,05±1,52	3,98±1,08	4,03±0,94	4,01±0,99
Total	**203**	**78**	**3,31±1,28**	**3,04±1,12**	**3,23±1,24**	**1,75±1,56**	**1,49±1,31**	**1,56±1,39**	**4,43±1,05**	**4,19±1,06**	**4,37±1,06**

Table 4 - Estimates and significance of the adjusted ordinal regression model using as reference the possible dependence class and the male gender. Araraquara, 2012

	Parameter	Estimate	Standard-error	c^2_{Wald}	df	p-valor	CI95%	OR (CI95%)
Thresholds	Abstemious	1.94	0.71	23.75	1	<0.01	-4.83 – -2.06	-
	Moderate drinking	1.16	0.67	0.64	1	0.42	-1.86 – 0.78	-
	Risky drinking pattern	-0.54	0.68	2.91	1	0.09	-0.17 – 2.48	-
	High risk drinking pattern	3.44	0.65	7.80	1	0.01	0.58 – 3.30	-
Location	**Exhaustion**	**-0.32**	**0.11**	**8.25**	**1**	**0.01**	**-0.53 – -0.10**	**1.37 (1.10 - 1.70)**
	Cynicism	-0.01	0.11	0.02	1	0.89	-0.22 – 0.19	1.01 (0.82 - 1.25)
	Professional Efficacy	0.27	0.12	5.24	1	0.02	0.04 – 0.50	0.76 0.61 - 0.96)
	Sex	1.08	0.26	16.92	1	<0.01	0.57 – 1.60	0.34 (0.20 - 0.57)

According to the model, as exhaustion increases the probability of observing more frequent/excessive drinking also increases. For each exhaustion point added, risky drinking behavior increased by 37.2%. Regarding professional efficacy, the probability of observing risky drinking behavior increases with decreasing scores, that is, for every added point of professional efficacy the risky drinking behavior diminished by 33.7% (Table 4).

Regarding gender, we observed that women were 66.2% less likely to present frequent/excessive drinking pattern than men.

DISCUSSION |

This study allowed us to estimate the prevalence of burnout syndrome and alcohol consumption among dentistry students, and to detect a significant relation between the drinking pattern and burnout factors (exhaustion and professional efficacy). Although this relationship has already been presented in the literature in other populations, this is the first study, to our knowledge, to investigate this issue in dentistry students. Our findings may serve as a warning for students and educators, in order to minimize the chances of students engaging in risky behaviors both for their own health and their professional development.

The analysis of the psychometric properties of the data collected with the instruments used in this study supports the reliability and validity of the results here presented.

It should be noted that the low convergent validity and internal consistency observed in the Symptoms dimension of the AUDIT may be related to the characteristics of the sample, which was not necessarily comprised of individuals with risky drinking behavior. This fact is also reflected in the distribution of responses for item 6, which was skewed towards a lower response score. This bias was so strong that either keeping or eliminating the item did not result in a change in the classification of the individuals' drinking pattern in the AUDIT's final score. Thus, we chose to keep this item, thus maintaining the original format of the instrument.

The excessive intake of alcoholic beverages among college students has been widely reported[16, 17], and should be a serious concern for professionals, educators and authorities. In this sample, 90.8% of participants reported alcohol consumption (Table 2) and many said they ingested 5-10 doses in a single drinking occasion (Table 1), which characterizes binge drinking behavior. This behavior greatly increases the risk of addiction and negative physical, emotional and/or social alcohol-related consequences, which may be observed by the increased frequency of episodic intoxication [18].

The consumption of alcohol in this sample is reported by students of both genders, with a similar prevalence in the different categories of drinking behavior, with the exception of the category "possible dependence", whose prevalence was higher among men than among women, thus corroborating previous studies [19].

High alcohol consumption may be related to the large number of parties and celebrations held by students, with abundant access to the product, but it may also be a coping strategy to deal with the challenges of academic life. The recent independence from the family, the heavy academic workloads and the insecurity over the professional future can all make the university environment particularly stressful, and may result in states characteristic of the burnout syndrome[17, 19, 20]. Several studies [2, 3, 5-7, 18, 21, 22] have emphasized the use of alcohol as a coping strategy.

The relationship between burnout syndrome and alcohol consumption has been previously observed[23] , and alcohol misuse may be viewed as a strategy for regulating tensions - the lower the capacity of individuals to deal with problematic situations, the greater the consumption of alcoholic beverages. Although this relationship has been largely covered in the literature, this is the first study, to our knowledge, that details the role of the components of burnout syndrome in the drinking behavior of dentistry students.

The cross-sectional design of our study made it impossible to establish cause-effect relationships. However, the significant effects of exhaustion and professional efficacy on the probability of adopting different alcohol consumption behaviors (Table 4) have direct implications for the students' professional development and health. We are aware that our study can only point to these effects in a circular fashion.

CONCLUSION|

We observed that almost all undergraduate dental students consume alcoholic beverages, with a high prevalence of a risky drinking pattern. Men had a significantly higher prevalence of possible alcohol dependence. The prevalence of burnout in the sample was low. We observed a significant and positive contribution of exhaustion on the probability of observing risky drinking behavior, and an inverse relation with professional efficacy. Men were more likely to present risky drinking behaviors than women.

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