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SAMUEL DE CARVALHO CHAVES JUNIOR

CONDIÇÃO PERIODONTAL, HÁBITOS NOCIVOS E AUTOPERCEPÇÃO DE SAÚDE EM ADOLESCENTES E ADULTOS JOVENS

PERIODONTAL STATUS, HARMFUL HABITS AND SELF-PERCEPTION OF HEALTH IN ADOLESCENTS AND YOUNG ADULTS

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Dissertação apresentada à Faculdade de Odontologia de Piracicaba da Universidade Estadual de Campinas como parte dos requisitos exigidos para obtenção do título de Mestre em Odontologia, na Área de Odontopediatria.

Dissertation presented to the Piracicaba Dental School of the University of Campinas in partial fulfillment of the requirements for the degree of Master in Dentistry, Pediatric Dentistry area

Orientadora**:** Profa. Dra. Maria Beatriz Duarte Gavião

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A Ata da defesa com as respectivas assinaturas dos membros encontra-se no processo de vida acadêmica do aluno.

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RESUMO

A saúde é o resultado de relações funcionais complexas que envolvem aspectos físicos, mentais e sociais, havendo interação de estereótipos, crenças e formas de equilibrar subjetivamente as diversas instâncias envolvidas. A doença periodontal pode afetar o bem-estar geral do indivíduo. Este estudo teve por objetivo investigar a condição periodontal, hábitos nocivos, como o tabagismo, o consumo de bebida alcoólica, a experiência com maconha e a autopercepção de saúde em estudantes de Odontologia. Foi selecionada uma amostra de conveniência de 169 adolescentes e adultos jovens, com idades entre 16-24 anos, estudantes de graduação e pós-graduação da Faculdade de Odontontologia de Piracicaba. Foram analisadas as características sociodemográficas e antropométricas. As condições periodontais foram avaliadas com o Índice Periodontal Comunitário (CPI). Para obtenção do autorrelato de hábitos nocivos foi utilizado o instrumento "Comportamento de Saúde entre Escolares" (*Health Behavior in School-Aged Children*). A estatística descritiva consistiu de frequências, médias e desvios-padrão. Quando indicado, as variáveis sociodemográficas foram comparadas entre sexos utilizando o teste t de Student para amostras independentes ou o teste de Mann-Whitney, de acordo com o teste de normalidade (Kolmogorov-Smirnov). O teste de qui-quadrado foi utilizado para verificar a diferença de "cor da pele autodeclarado", "nível universitário" e "consumo de álcool". As associações foram verificadas com modelos de regressão logísitica. O nível de significância considerado foi α=0,05. O número de sextantes saudáveis, com sangramento, com cálculo e com bolsa peridontal $\geq$ 3,5 foi 21%, 56%, 20% e 3%, respectivamente. Cento e sessenta (95%) dos estudantes relataram não possuir o hábito de tabagismo e 130(77%) não tiveram experiência com maconha. Em relação à bebida alcoólica, 67(40%) dos estudantes relataram não ter o hábito, enquanto 51(30%) relataram consumo semanal e 48(28%) consumo mensal, este em maior proporção para o sexo masculino. A autopercepção de saúde foi considerada adequada por 103(61%) dos estudantes. A necessidade de tratamento periodontal não se associou às variáveis analisadas. Os estudantes com sobrepeso e obesidade apresentaram chance duas vezes maior de autopercepção negativa de saúde. Concluiu-se que não houve severidade da doença periodontal. As necessidades de tratamento detectadas não foram associadas às variáveis analisadas, bem como não influenciaram a autopercepção de saúde, a qual foi associada ao sobrepeso e obesidade. No entanto, o autocuidado com a saúde periodontal deve ser considerado.

Palavras-chaves: Periodonto. Tabagismo. Entorpecente. Índice de massa corporal. Saúde oral.

ABSTRACT

Health is the result of complex functional relationships that involve physical, mental and social, with stereotypes, beliefs and forms of equilibrium subjectively being involved as diverse instances involved. The periodontal disease can affect the individual's well-being. This study aimed to investigate periodontal health, harmful habits such as smoking, alcoholic beverage consumption, *Cannabis* experience and self-rated health in dental students. A convenience sample 169 of adolescents and young adults, ages 16-24, undergraduate and graduate students of the Piracicaba Dental School was selected. Sociodemographic and anthropometric characteristics were analyzed. Periodontal status were evaluated with the Community Periodontal Index (CPI). For obtain the self-report of harmful habits, the instrument "Health Behavior in School-Aged Children" (HBSC) was used. The descriptive statistics consisted of frequencies, means and standard deviations. When indicated sociodemographic variables were compared between genders using Student's t-test for independent samples or the Mann-Whitney test, according to the normality test (Kolmogorov-Smirnov). The chi-square test was used to verify the difference in "self-reported skin color", "college level" and "alcohol consumption". The associations were assessed using logistic regression models. The level of significance was $\alpha = 0.05$. The number of healthy, bleeding, calculus and peridontal pocket with ≥3.5 sextants was 21%, 56%, 20% and 3%, respectively. One hundred-sixty (95%) of the students reported not having a smoking habit and 130(77%) had no experience with *Cannabis*. Regarding alcoholic beverages, 67(40%) of the students reported not having the habit, while 51(30%) reported weekly consumption and 48(28%) monthly consumption, the latter being a higher proportion for males. Self-perception of health was considered adequate by 103(61%) of the students. The need for periodontal treatment was not associated with the analyzed variables. Overweight and obese students had a twofold higher chance of self-perceived negative health. It was concluded that the periodontal conditions of the studied sample was not severe. The needs of periodontal treatment were not associated with the analyzed variable, as well as did not influence the self-rated health, which was associated to overweigh or obesity. Therefore, oral care needs to be more emphasized.

Keywords: Periodontium. Smoking. Narcotics. Body Mass Index. Oral health.

SUMÁRIO

1 INTRODUÇÃO

A saúde é o resultado de relações funcionais complexas que envolvem aspectos físicos, mentais e sociais, havendo interação de estereótipos, crenças e formas de equilibrar subjetivamente as diversas instâncias envolvidas (Strelhow et al., 2011). O conhecimento sobre saúde e os fatores que a influenciam é essencial para o desenvolvimento de políticas efetivas de promoção de saúde, programas e práticas direcionadas à população. Neste sentido, torna-se relevante que a saúde seja considerada em sentido amplo, englobando aspectos físicos, sociais e bem-estar emocional, uma vez que constitui recurso para a vida cotidiana das pessoas e não apenas ausência de doença (OMS, 1986).

A saúde oral dos indivíduos tem sido reconhecida como um dos fatores determinantes da saúde geral e qualidade de vida (Clemmens et al., 2012, Barbosa et al., 2013). No entanto, doenças bucais são ainda um dos problemas mais prevalentes que afetam o bem-estar geral da população mundial (Nakre & Harikiran, 2013). Desta forma, torna-se relevante explorar a percepção e os fatores de risco implicados (Piko, 2007).

A percepção dos cuidados profissionais e a prática da manutenção da saúde oral são desenvolvidas durante a educação formal. A avaliação dos padrões de atitudes e do comportamento em saúde entre estudantes da área de saúde, tais como frequência, duração e tempo de higiene, utilização de dentifrícios fluoretado e freqüência de visitas ao dentista, são de importância, porque o desenvolvimento da própria percepção e o conhecimento dos métodos preventivos e curativos, podem influenciar as percepções e atitudes da população para a manutenção da saúde (Hongal et al., 2014; Rajiah & Ving, 2014). Sendo assim, o conhecimento sobre o comportamento em saúde de estudantes e profissionais da área da saúde, torna-se de importância para reforçar a credibilidade dos modelos de promoção da saúde oral (Keten et al., 2017). Além disso, ótimas práticas relacionadas à saúde são mais susceptíveis de ser tomadas se um indivíduo sente uma sensação de melhor controle sobre sua saúde, com melhor compreensão das doenças e sua etiologia (Hongal et al., 2014).

A doença periodontal possui prevalência considerável e pode influenciar o bem estar e a qualidade de vida pelas consequências advindas, como por exemplo, sangramento gengival, cálculo, bolsas periodontais e perda dentária (Bassani &

Lunardelli, 2006; Nibali et al., 2016). A prática da higiene oral é fator influenciador dessa condição, pois o biofilme bacteriano é um dos principais fatores etiológicos. No entanto, a doença periodontal é reversível, pois fatores de ordem individual e coletiva, como a atuação profissional, podem interagir de modo efetivo (Bassani & Lunardelli, 2006, Fonseca et al., 2015). A prevalência da doença periodontal "moderada a grave" em brasileiros adultos, foi de 15,3% e 5,8% para a condição "grave" (Vettore et al., 2013).

Um dos fatores de risco para a doença periodontal é o tabagismo (Sherwin et al., 2013). O efeito nocivo do fumo depende da dose e pode estar associado ao aumento na profundidade de sondagem e perda de inserção, o que aumenta as chances de destruição periodontal e, consequentemente, perda dentária (Mullally, 2004; Sherwin et al., 2013). Este hábito, em adolescentes, é motivo de grande preocupação (Dolcini et al., 2003), pois o tabaco constitui uma das principais causas de morbidade, mortalidade e problemas sociais entre os adolescentes (Brener et al., 2003), além de ser prejudicial para saúde oral, levando ao risco de desenvolver lesões pré-cancerígenas da cavidade oral (principalmente leucoplasia), câncer oral, doenças periodontais e outras doenças bucais deletérias, como gengivite ulcerativa necrosante aguda, candidíase oral (Vellappally et al., 2007).

Além do tabaco, o álcool e a maconha são duas substâncias comumente utilizadas durante a adolescência (Green et al., 2016). Crianças e, especialmente os adolescentes, estão entre os usuários mais vulneráveis de drogas psicoativas e álcool. Isto porque o sistema nervoso está em desenvolvimento, são menos conscientes de seus próprios limites e, muitas vezes, tomam doses mais elevadas, que podem resultar em intoxicação significativa, colocando-os em situações de alto risco (Penney et al., 2016). Nos últimos 25 anos, embora no Brasil tenha ocorrido declínio na prevalência do tabagismo devido às políticas de controle de tabaco que foram implementadas, passando de 34,8% em 1989 a 14,7% em 2013 na população de 18 anos ou mais (inclusive entre os jovens adultos – 18 a 24 anos, passando de 29% a 10,6% (Szklo et al., 2016; Figueiredo et al., 2016), ainda é um aspecto que não deve ser negligenciado, pois constitui comportamento de risco à saúde.

Neste contexto, a saúde oral nos estudantes universitários tem sido avaliada e, em geral, é observada a necessidade da promoção de saúde para aprimoramento dos respectivos comportamentos (Freire et al., 2012; Shah & ElHaddad, 2015; Keten et al.,

2017). Não obstante, a relação positiva entre o conhecimento adquirido e a prática clínica foi encontrada em estudantes universitários (Calderón et al., 2007). Observa-se na literatura um número crescente de pesquisas sobre a percepção e fatores de risco à saúde por meio da administração de questionários autoaplicados (Brener et al., 2003; Piko, 2007). O instrumento "Comportamento de Saúde entre Escolares" (*Health Behavior in School-Aged Children*), desenvolvido pela OMS para estudar os estilos de vida e comportamento em saúde (OMS, 1995), tem sido utilizado para avaliação da percepção de saúde em diferentes países. No Brasil, Strelhow et al. (2011) e Câmara et al. (2012), ao utilizar este instrumento, verificaram que a prevenção e promoção da saúde da população adolescente, devem incluir questões relacionadas aos seus âmbitos de vida imediatos (família, escola, amigos), possibilitando visão ampla e maior alcance para resultados efetivos, considerando-se diferenças entre gêneros, bem como de grupos de adolescentes com determinadas especificidades.

Desta forma, este estudo teve por objetivo investigar a saúde periodontal e hábitos nocivos, como consumo de álcool, tabagismo e outras drogas psicoativas e percepção de saúde em estudantes de Odontologia.

2 ARTIGO

Periodontal status, health perception and use of licit and illicit drugs in Brazilian dental students

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Abstract

Health is the result of complex functional relationships that involve physical, mental and social, with stereotypes, beliefs and forms of equilibrium subjectively being involved as diverse instances involved. The periodontal disease can affect the individual's well-being. This study aimed to investigate periodontal health, harmful habits such as smoking, alcoholic beverage consumption, *Cannabis* experience and self-rated health in dental students. A convenience sample of adolescents and young adults, ages 16-24, undergraduate and graduate students of the Piracicaba Dental School was selected. Sociodemographic and anthropometric characteristics were analyzed. Periodontal status were evaluated with the Community Periodontal Index (CPI). For obtain the self-report of harmful habits, the instrument "Health Behavior in School-Aged Children" (HBSC) was used. The descriptive statistics consisted of frequencies, means and standard deviations. When indicated sociodemographic variables were compared between genders using Student's t-test for independent samples or the Mann-Whitney test, according to the normality test (Kolmogorov-Smirnov). The chi-square test was used to verify the difference in "self-reported skin color", "college level" and "alcohol consumption". The associations were assessed using logistic regression models. The level of significance was $\alpha = 0.05$. The number of healthy, bleeding, calculus and peridontal pocket with ≥3.5 sextants was 21%, 56%, 20% and 3%, respectively. Ninety-five percent of the students reported not having a smoking habit and 77% had no experience with *Cannabis*. Regarding alcoholic beverages, 40% of the students reported not having the habit, while 30% reported monthly consumption and 28% weekly consumption, the latter being a higher proportion for males. Self-perception of health was considered adequate by 61% of the students. The need for periodontal treatment was not associated with the analyzed variables. Overweight and obese students had a twofold higher chance of self-perceived negative health. It was concluded that the periodontal conditions of the studied sample was not severe. The needs of periodontal treatment were not associated with the analyzed variable, as well as did not influence the self-rated health, which was associated to overweigh or obesity. Therefore, oral care needs to be more emphasized.

Keywords: Periodontium. Smoking. Narcotics. Body Mass Index. Health.

Introduction

Researches dealing with health behaviors and the factors that influence them are relevant for the development of effective health promotion and health improvement policies, programs and practices target at population. It is important that people's health would be considered in its broadest sense, encompassing physical, social and emotional well being (HBSC, 2013/2014).

Nowadays, the importance of oral health on general health has been evidenced. Optimal behavior of oral health is required for maintaining good oral health. However, oral disease still continues to be one of the most prevalent problems affecting the overall wellbeing of the world's population (Nakre & Harikiran, 2013).

The periodontal disease can influence the wellbeing and the quality of life due to their harmful consequences; Its prevalence has been considered high, even in young individuals (Bassani & Lunardelli, 2006, Fonseca et al., 2015). Nevertheless, the periodontal diseases can be controlled, since individual and professional intervention are effective (Bassani & Lunardelli, 2006, Fonseca et al., 2015).

Healthcare professionals' perceptions and practice of oral health maintenance are typically developed during formal education. Assessing these patterns of oral health attitudes and behavior among healthcare professional students are of particular importance because the development of their own perceptions and practices of oral health maintenance have a direct impact on their ability to influence their patients' perceptions and practice of oral health maintenance (Hongal et al., 2014; Rajiah & Ving, 2014; Ali, 2016).

The identification of smoking as a risk factor for chronic periodontitis triggered a considerable amount of research that examines the strength of its impact on periodontal health. The risk of chronic periodontitis attributable to tobacco use was reported to be 2.5 to 6.0 or higher (Santos et al., 2015). However, the question remains if the tooth loss in smokers is mainly due to use of tobacco or other external factors, such as attitudes and behavior, especially related to oral hygiene habits. Accordingly, other studies have identified more plaque and calculus in smokers than in nonsmokers (Muller et al., 2001; Santos et al., 2015). The gingival bleeding has been shown to predict future periodontitis in follow-up studies, in young adults (Tanner et al., 2015).

Excess alcohol consumption affects social relationships and health, and causes about 2.5 million of deaths each year (World Health Organization). Tobacco causes significant morbidity and mortality, including cardiovascular disease, peripheral vascular disease, lung cancer and chronic obstructive pulmonary disease (Arora et al., 2015). Alcohol and *Cannabis* are two substances commonly used during adolescence. The access to those substances can be by friends and/or social networks, increasing with age (Warren et al., 2015).

Oral health in university students has been evaluated and, in general, the need for health promotion to improve their behavior is observed (Freire et al., 2012; Shah and ElHaddad, 2015; Keten et al., 2017). In this context, the instrument "Health Behavior in School-Aged Children", developed by WHO to study lifestyles and behavior in health (Wold, 1995), has been used to evaluate health perception in different countries, aims to gain new insight into, and increase understanding of, adolescent health behaviors, health and lifestyles in their social context.

The aim of this study was to evaluate the periodontal conditions, frequency of smoking, alcohol and *Cannabis* in students. Furthermore, the self-rated health was also assessed.

Methods

Study design

This is a descriptive cross-sectional study with a quantitative and qualitative approach. The study was approved by the Research Ethics Committee of Piracicaba Dental School – University of Campinas (UNICAMP) under the Protocol nº 786.817. For participants under 18 years old, their guardians were asked to sign a permission form that gave details about the procedures and possible discomforts or risks derived from the research. For participants older than 18 years of age, the same protocol was utilized and presented to the study individual. The participant or guardian signed the Informed Consent. Those under 18 years old signed the Informed Assent.

Sample

A convenience sample of adolescents and young adults, aged 16-24 years old was selected. The volunteers were undergraduate and graduate students from Piracicaba Dental School, University of Campinas (FOP-UNICAMP). The inclusion criteria were

to be undergraduate or graduate student, systemically healthy, able to participate in the research, and willing to sign the Informed Consent or Assent. The exclusion criteria were: individuals who possessed any diagnosis of mental disorders, or systemic disorder that could compromise the stomatognathic system and persons in periodontal treatment. About 300 volunteers were invited to participate. Of these, 194 were accepted and examined. However, 04 volunteers dropped out, citing lack of time or interest in completing the questionnaire and 21 did not meet the inclusion criteria, resulting in a final sample of 169 subjects. Data collection took place from March 2015 to September 2015.

Socio-demographic characteristics

The sociodemographic characteristics were registered using a structured questionnaire. The following variables were considered: gender, age, self-declared skin color, family income and parents' education level.

The family income was distributed in units of monthly minimum salaries, as used in Brazil. The following ranges were adopted: up to 3 minimum salaries, between 4-10 salaries, from 11-30 salaries, and those who did not declare any income (at the time of the interview, the minimum salary in Brazil was R$ 788.00, corresponding to US$ 274).

The following parent education levels were considered: "No formal education", "Grade school", "High School", "University".

Anthropometric variables

Weight (Kg) and height (m) were assessed and the Body Mass Index (BMI = weight/height^2) calculated (WHO, 2005). Weight was obtained with an analog scale, and height by means of a stadiometer (Welmy type 110, Santa Bárbara D'Oeste, SP, Brazil). For volunteers aged 16-19 years the interpretation of weight status was according to the CDC BMI-for-age growth charts, which visually shows BMI as a percentile ranking, taking into account age and sex (Table 1). The BMI interpretation for those aged equal or more than 20 years was based in weight status categories (Chart 1).

Chart 1 - Standard weight status categories associated with BMI ranges for adolescents and adults

Weight Status Category	Percentile Range < 20 years	BMI ≥ 20 years
Underweight	Less than the 5th percentile	Below 18.5
Normal or Healthy Weight	5th percentile to less than the 85th percentile	18.5 – 24.9
Overweight	85th to less than the 95th percentile	25.0 – 29.9
Obese	Equal to or greater than the 95th percentile	30.0 and above

Adapted from http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html.

Periodontal status

The periodontal status was assessed using the Community Periodontal Index (CPI), which has three indicators: gingival bleeding, calculus and depth of the periodontal pockets (WHO, 1997); the respective scores are: 0- Healthy; 1- Bleeding after probing; 2- Calculus; 3- Pocket 4–5 mm; 4- Pocket 6 mm or more. The highest CPI score for each sextant was recorded from six index teeth (16, 11, 26, 36, 31 and 46). Each tooth index was carefully examined according to sextants using a mirror and gingival probe with a 0.5-mm ball tip (WHO, 1997), applying a force about 20 g. If an index tooth was missing, all the remaining teeth in the respective sextant were examined and the highest score was recorded. For statistical analysis, four categories were considered: healthy, bleeding, calculus and periodontal pocket, according to the sextants. One examiner (S.C.C.J.) was trained and calibrated prior to data collection by a dentist as the gold standard, who is expertise in periodontal evaluation. A pilot study was conducted involving 20 individuals who did not participate in the present study. Substantial intra-agreement was achieved relative to the CPI (Kappa = 0.61); this agreement is considered adequate for periodontal researches. All procedures were carried out in the Dental Clinic of Piracicaba Dental School - UNICAMP.

The participants were asked about tooth brushing and all of them reporting a frequency of at least twice a day.

Selected self-reported questions of the Health Behavior in Schoolchildren (HBSC http://www.hbsc.org) developed by WHO were used to verify some aspects of life style in adolescents, following the adaptation to Portuguese language by Câmara et al. (2012). Moreover, self-rated health was evaluated.

The questions were:

Smoking

In relation tobacco use the volunteers were asked: (1) "*Do you have ever smoked? (At least one cigarette), if so and the frequency in the last year, with response options of "every day", "every week, but not daily", "less than once a week", "I do not smoke". (2) "Any of the following people smoke?", with response options of "father", "mother", "best friend".*

Present smoking status

The present smoking status was assessed by asking the students 'how often do you smoke at present?' The response alternatives were: *'every day', 'every week, but not daily', 'less than once a week', 'I do not smoke'*. Weekly smoker was defined as those students reporting that they smoke every day or every week.

Alcohol consumption

The volunteers were asked about alcohol use and the frequency, asking: (1) *"do you use alcohol? If so, how often you take alcohol?", with response options of "daily, "weekly", "monthly".*

Cannabis

The question was *"How many times have you used "Cannabis"? with response options of "never", "1-2 times", "three or more times".*

Self-rated health

The volunteers were asked to describe how they feel about their health, asking *"How healthy do you think you are?" with response options of "excellent", "good", "fair" and "poor".*

Statistical analysis

The data were analyzed by the Statistical Package for the Social Sciences - SPSS (20.0 SPSS Inc., Chicago, IL, USA). Descriptive statistics consisted of frequencies, means, and standard deviations. When indicated, the sociodemographic variables were compared between sexes using the Student *t*-test for independent samples or the Mann-Whitney test, according to the normality test (Kolmogorov-Smirnov). The chi-squared test was used to verify the difference in "self-declared white", "university level", and "alcohol consumption weekly". Logistic regression models were built. The first considered the dependent variable the CPI ≥ 2, meaning higher treatments need (Tanner et al., 2015) and the second the dependent was weight status. The independent variables were sex (female=0, male=1), parents' education (University level=0, Grade and high school=1) weight status (underweight/eutrophic=0; overweight/obese=1) (for first model and as dependent variable in second model), smoking (no=0, yes=1, alcohol consume (no=0, yes=1) frequency of alcohol consume (no=0, daily, weekly, monthly=1) and *Cannabis* consume (no=0, yes=1) and self-rated health (excellent/good=0, poor/fair=1). First, a univariate logistic regression was applied and the variables with $P<0.25$ entered in the multiple model. The significant level was considered as $\alpha=0.05$.

Results

The sociodemographic characteristics of the volunteers are shown in Table 1. The average age was 20.93±1.84 years. With regards to skin color, individuals who reported white were in the majority (84%). The family income ranged from three to thirty minimum salaries, with an average of 8.33±5.45. Most of the individuals (68%) reported a family income ranging from four to ten minimum salaries. The prevalence of individuals with normal BMI was higher than overweight and obese ones, without difference between males and females ($p>0.05$).

Table 1- Descriptive statistics: sociodemographic characteristics, anthropometric variables and weight status, according to sex

		Male N (%)	Female N (%)	Total N (%)
Students	Undergraduate	39 (23)	110 (65)	149 (88)
	Graduate	10 (6)	10 (6)	20 (12)
	Total	49 (29)	120 (71)	169 (100)
	Age (mean±SD)	21.33±1.6	23.35±1.90	20.93±1.84
Skin Color	White	39 (23)*	103 (61)*	142 (84)*
	Brown	7 (4)	7 (4)	14 (8)
	Yellow (East Asian)	3 (2)	4 (2)	7 (4)
	Black	-	4 (2)	4 (2)
	No response	-	2 (1)	2 (1)
Mother's level of education	No Formal Education	-	-	-
	Grade School Level	8 (5)	9 (5)	17 (10)
	High School Level	11 (7)	31 (18)	42 (25)
	University Level	30 (18)*	80 (47)*	110 (65)*
Father's level of education	No Formal Education	-	1 (1)	1 (1)
	Grade School Level	5 (3)	10 (6)	15 (9)
	High School Level	10 (6)	33 (20)	43 (25)
	University Level	34 (20)*	76 (45)*	110 (65)*
Family income (minimum salary)	Up to 3 Salaries	6 (4)	9 (5)	15 (9)
	From 4 to 10 Salaries	35 (21)	80 (47)	115 (68)
	From 11 to 44 Salaries	6 (4)	22 (13)	28 (17)
	No response	11 (7)	-	11 (7)
	Mean±SD	8.39±5.4	7.90±5.32	8.33±5.45
Weight (kg)	Range 43-109	75.7±13.24[a]	61.06±10.14[b]	65.31±12.94
Height (m)	Range 1.52-1.92	1.77±0.07[c]	1.64±0.06[d]	1.68±0.08
BMI	Range 15.80-36.32	24.22±3.72[c]	22.77±3.56[d]	23.19±3.66
Weight status	Underweight	1 (1)	9 (5)	10 (6)
	Eutrophic	30 (18)	83 (49)	113 (67)
	Overweight	14 (8)	23 (14)	37 (22)
	Obese	4 (2)	5 (3)	9 (5)

BMI (Body Mass Index);
Small different letters in the same line mean significant difference between males and females
a≠b Mann Whitney test $p<0.001$; c≠d *t* test $p<0.001$
Values followed by * mean greater proportion for "self-declared white" and "university level" $\chi 2$ $P<0.05$

Table 2 shows the number of sextants according to periodontal status. More sextants were scored as bleeding, totaling a mean value of 3.35(±1.23). The distribution of healthy, bleeding, calculus and periodontal pocket sextants and the respective mean values were similar among the scholar degrees.

Table 2: Sextants distribution and mean number (± SD) of sextants according to the periodontal status by scholar degree

		Sextants by scholar dregree					
Sextants		1st year	2nd year	3rd year	4th year	Grad.	Total
Healthy	n (%)	41 (21)	31 (21)	43 (19)	73 (23)	29 (24)	217 (21)
	Mean (SD)	1.28 (1.2)	1.24 (1.3)	1.13 (1.07)	1.35 (1.29)	1.45 (1.43)	1.28(1.23)
Bleeding	n (%)	100 (52)	87 (58)	140 (61)	176 (54)	64 (53)	567 (56)
	Mean (SD)	3.13 (1.41)	3.48 (1.26)	3.68 (1.23)	3.26 (1.29)	3.2 (1.4)	3.35(1.31)
Calculus	n (%)	42 (22)	29 (19)	43 (19)	62 (19)	27 (23)	203 (20)
	Mean (SD)	1.31 (1.28)	1.16 (0.94)	1.13 (0.81)	1.15 (0.86)	1.35 (1.5)	1.2(1.03)
Pocket ≥ 3.5 mm	n (%)	9 (5)	3 (2)	2 (1)	13 (4)	-	27 (3)
	Mean (SD)	0.28 (0.68)	0.12 (0.44)	0.05 (0.23)	0.24 (0.58)	-	0.15(0.49)
Total							1014

Table 3 shows the sample distribution according to the answers from the questionnaire. Most of the students did not smoke any time (67%). The frequency of non-smokers was high (95%) and the others have been smoking daily. The fact of parents and friends smoke was not associated with the student smoke (χ^2 P>0.05). Forty percent of the students do not consume alcohol. The proportion of males who consume alcohol weekly was higher than females, but monthly there was no difference. The frequency of student who never experienced *Cannabis* was high also (77%) and the frequency in the last 30 days increase for those who did not use (89%). The most of the student rated their health as excellent or good (60%), but 40% rated it fair or poor.

Table 3 - Sample distribution for the answers about smoking, alcohol and *Cannabis* consumption and self-rated health according to sex

	Male N (%)	Female N (%)	Total N (%)
Smoking (At least one cigarette)			
Yes	20 (41)	35 (29)	55 (33)
No	29 (59)	85 (71)	114 (67)
Smoking (Frequency in the last year)			
Every day	6 (12)	3 (3)	9 (5)
Every week, but not daily	-	-	-
Less than once a week	-	-	-
I do not smoke	43 (88)	117 (98)	160 (95)
Smoking (Any of the following people smoke?)			
Father	9 (18)	17 (14)	26 (15)
Mother	4 (8)	8 (7)	12 (7)
Best friend	9 (18)	6 (5)	15 (9)
Alcohol consumption			
No alcohol	15 (31)	52 (43)	67 (40)
Daily	1 (2)	2 (2)	3 (2)
Weekly (* $\chi 2$ P= 0.02)	22 (45)*	29 (24)*	51 (30)
Monthly	11 (22)	37 (31)	48 (28)
Cannabis			
Never	35 (71)	95 (79)	130 (77)
1-2 times	2 (4)	16 (13)	18 (11)
1-3 times or more	12 (24)	9 (8)	21 (12)
Self-rated health			
Excellent	5 (10)	6 (5)	11 (7)
Good	29 (59)	63 (53)	92 (54)
Fair	15 (31)	49 (41)	64 (38)
Poor	-	2 (2)	2 (2)

The bivariate logistic regression with CPI≥2 as dependent variable showed no statistical significance. The only variable with P≤0.25 was father's level of education (P=0.17). Thus, the multiple model could be not built, meaning that the CPI were not associated with the others variables.

Considering the weight status as dependent variable, the independent ones having a p-value ≤0.25 were showed on Table 4.

Table 4 – Univariate logistic regression considering weight status as dependent variable

Dependent: Weight status				
Independents:	Coefficient	*P*-value	OR	IC 95%
Smoking	1.792	0.014	6	1.43-25.11
Alcohol consume	0.448	0.218	1.565	0.77-3.19
Alcohol frequency	0.441	0.223	1.554	0.77-3.15
Self-rated health	0.744	0.034	2.104	1.06-4.19

The multiple regression model for variables of Table 4 showed that the self-rated health was the only variable that remained significant. This finding means that the chance of students rating their health as "poor" or "fair" to be overweight or obese was twice in relation to those who considered their health as "excellent" or "good" (Table 5).

Table 5 - Multiple logistic regression considering weight status as dependent variable

Dependent: Weight status				
Model chi-square – 11.12 P=0.025				
Independents:	Coefficient	*P*-value	OR	IC 95%
Smoking	1.396	0.07	4.041	0.89-18.37
Alcohol consume	0.306	0.49	1.358	0.57-3.24
Alcohol frequency	0.219	0.629	1.244	0.51-3.03
Self-rated health	0.743	0.045	2.103	1.02-4.35

Discussion

This study was carried out with the purpose of evaluating the relationship of harmful habits, and periodontal status in adolescents and young adults. Currently it is known that the oral health of individuals is vital for overall health and quality of life (Clemmens et al., 2012, Barbosa et al., 2013).

The sample was comprised by dental students, predominantly undergraduate (88%), and about 71% were female. It is due to the fact that the Piracicaba Dental School has a greater number of female students (Data - yearbook Unicamp 2015), following the trend in Brasil in relation to the feminization occurrence in the dental courses (69%), as well as in other health areas (IBGE, 2010). Moreover, they were more receptive for participating than males.

The non-response rate was approximately 35%, which can be considered high, despite the effort to recruit the participants. This value is higher than the one found by Ali (2016) in a study about oral health in students of Medicine, Dentistry, Pharmacy, and Allied Health, with the same age of the sample of the present study. Conversely, Freire et al. (2012) found a non-response rate of 59.6% in a similar study with students of a public university living in student residences. The differences could be attributed to the way the volunteers were invited to participate. In the present study, the students

were personally invited, whereas in Freire et al. the invitation was made by advertisements in strategic places at the University campus.

Most of the volunteers presented a good socioeconomic level, since 93% declared family income from 4 to 30 minimum salaries, meaning middle and upper classes (IBGE, 2010). In addition, most parents had a higher level of education, supporting the socioeconomic level of the sample studied.

The weight status showed that most of the volunteers (67%) were normal weight and a small number (6%) were underweight. However, 27% of the sample was classified as overweight and obese, agreeing with Irigoyen-Camacho et al. (2014); this prevalence can be considered disturbing, particularly because the individuals are studying healthcare. It is interesting to emphasize that one risk factor for obesity is the same for dental caries, i.e., the excess and frequency of carbohydrate consumption. In this context, education aimed at controlling obesity could be combined in the dental curriculum with the acquisition of knowledge about the maintenance of good oral and systemic health.

The percentage of healthy sextants (21%) can be considered low, but this finding was higher than the one found by Dhaifullah et al. (2015) in a similar sample of dental students. On the other hand, 3% of sextants presented periodontal pocket more or equal 3.5 mm, showing that signs of advanced destructive periodontal disease can be considered negligible in the studied sample, as also observed by Marulanda et al. (2014) in Colombian university students. Moreover, a great number of sextants were scored as bleeding, despite the students have reported daily tooth brushing frequency as twice or more. Maybe the lack of enough care during brushing could be an influencing factor, as previously pointed out by Marulanda et al. (2014), who observed the same pattern of bleeding in university students. It was expected also a low frequency of sextants with calculus and the respective mean value was 1.2 (20%), which was similar to previous studies with dental students (Baser et al, 2014; Marulanda et al., 2014). Those findings were unexpected and a consideration related to CPI must be taken into account. Most epidemiological surveys for periodontal disease conducted worldwide have been using CPI, since it was developed and recommended by the World Health Organization. Because this, it was applied in the presented study. Nevertheless, some criticisms have been pointed out, for example, the overestimation of periodontal pocket (Aucott &

Ashley, 1986; Vettore et al., 2007). Nevertheless, a good readability was found for gingivitis (Benigeri et al., 2000), but Tanner et al. (2015) considered that CPI is a roughness index, due to the possibility of overestimation or underestimation of the disease.

Since most students were undergraduate level, an improvement in CPI values was expected along of the school years, since their oral health attitudes and behavior could be improved as they advance during their dental training (Kumar et al., 2012). No significant improvement in CPI scores among different academic levels was observed (Table 4) agreeing with Dhaifullah et al. (2015). The cross sectional characteristic of the present study can explain this finding, inferring the needs of longitudinal design to establish the direction of the causality, as well as the onset of the oral diseases. This fact does not discard the importance to emphasize the educational and preventive measures for self-care by the students, as previously considered by Hill et al. (2013) for general population.

In order to improve the knowledge about health behavior and some aspects of lifestyles in school setting, questions about smoking, alcohol consumption, and illicit substance use were addressed. Moreover, overall conception of self-health was also considered.

Smoking is other well-known risk factors to general health. Some epidemiological studies in the health area have been carried out in Brazil, describing the prevalence of smokers among students, but none were carried out in a specific population of dental students (Andrade et al., 2006), future professionals who will have the primary function of oral health care. In the present study, only 9 (5%) of the students related the respective addiction, data similar to previous study (Granville-Garcia et al., 2012; Madruga et al, 2012), but lower than Sanchez et al. (2010). The reforms have occurred since 2001 restricting tobacco advertisement on the media and banning smoking in private and public places have been showing results, since a significant decrease on the use of tobacco among adolescents has already been detected (Galduróz et al., 2007; Granville-Garcia et al., 2012). In the studied sample 33% smoked at least one cigarette along the life, but there was no continuity. Family-related aspects, as well as, institutional or school level have emerged as important factors in analyses of adolescent smoking. However, the prevalence of daily smoking students of

the present sample was lower than their parents and best friends. Maybe, a greater awareness of the harmful effects of smoking or to well succeed national and state antismoking policies have influenced the low prevalence found, as considered by Granville-Garcia et al. (2012).

In spite of alcohol beverages have been easily accessible, 40% of the participants do not consume alcohol any time. Conversely, 28% and 30% reported monthly and weekly consume, respectively, but the severity of the consumption cannot be estimate, corroborating Tanner et al. (2015) in Finnish young adults. Consequently, it is not possible to infer that the students were regular alcohol users, differently from Madruga et al. (2012) who observed that more than half of a representative sample of Brazilian adolescents was regular alcohol users. The proportion of males drinking weekly was significantly higher than females agreeing with Pedrosa et al. (2011). Despite the results, in a general context, alcohol use or abuse is a considerable problem in contemporary societies, and it is closely associated with negative short- and long-term health outcomes (Coelho et al., 2015).

Regarding to illicit substance, 77% of the students have not experienced *Cannabis*. An explanation for this result is that getting older decreases the likelihood of using illegal substances, but the likelihood of having alcohol use increases with age (Madruga et al., 2012). We can suggest that it is of cultural use in this age group.

Self-rated health captures an overall conception of health, assessing health and well-being from subjective perspective. It is interesting to note that 38% of the sample rated their health as fair and 2% as poor. There was no difference between sexes. Nevertheless, previous studies showed lower self-perception among women (Vingilis et al., 2002; Sweeting & West, 2003; Cavallo et al., 2006). Since the frequency of overweight/obesity was about 33%, the possible associations with the variables of the present study were looked for. The simple regression model showed significant associations between wright status, smoking and self-rated health. Along the multiple model, the self-rated health was the only variable that remained significantly confirming that weight status is worrying the participants. Considering the present findings, it would be relevant to verify the other causes about self-reported health as fair or poor, since many factors can be involved.

Furthermore, considering the results about periodontal status, the possible associations with the analized variables were verified, but the tests failed to demonstrate them. Probably, the homogeinity of the most sociodemographic characteristics, which have entered into the models, the low frequency of licit and illicit substances consumption, summed to the lack of advanced destructive periodontal disease can be the determining factors. Furthermore, periodontal status did not influence the self-rated health.

Some study limitations should be pointed out: the non-response rate was high, despite our best efforts to invite the students, some of whom did not want to participate and others who did not adhere to the methodology requirements. Additionally, since the questionnaire was self-applied, over- or underreporting of answers may have occurred, adding a cross-sectional characteristic of the study. Moreover, many volunteers did not know the family income, so a subjective evaluation of socioeconomic status could have been used, asking how they rated their family's socioeconomic status (Piko, 2007). Finally, the students were from a dental school, indicating the need for a more representative sample from universities in other regions of Brazil.

It can be concluded that the periodontal conditions of the studied sample was not severe, but oral care needs to be more emphasized. The sociodemographic characteristics, such as sex, parent's level of education, weight status, the low frequency of licit and illicit substances consumption, were not associated with periodontal treatment needs, which did not influence the self-rated health. The students who were overweight and obese presented more chance to rated their health negatively.

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3 CONCLUSÃO

Perante os resultados obtidos, concluiu-se que:

As condições periodontais dos estudantes determinaram maior frequência de sextantes com sangramento, seguidos pelos saudáveis e com cálculo. Houve baixa frequência de sextantes com bolsa periodontal. Não houve diferença nos valores do CPI entre os estudantes dos diferentes anos de Graduação e da Pós-Graduação.

A maioria dos estudantes (95%) relatou não possuir o hábito do fumo e 77% não relataram experiência com maconha. Quarenta por cento dos estudantes relataram que não consumiam bebida alcoólica, sendo o consumo mensal e semanal relatado por 28% e 30%, respectivamente. A proporção de estudantes do sexo masculino que relataram consumo semanal foi significativamente maior que o feminino. No entanto, não se pode inferir que o consumo foi excessivo.

A autopercepção de saúde foi considerada adequada por 61% dos estudantes.

A necessidade de tratamento periodontal (CPI≥2) não se associou às variáveis sociodemográficas, ao uso de substâncias lícitas e ilícitas e a autopercepção de saúde.

Os estudantes com sobrepeso e obesidade apresentaram chance duas vezes maior de autopercepção de saúde negativa.

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Apêndice 1

Ficha Clínica

FICHA CLÍNICA

UNIVERSIDADE ESTADUAL DE CAMPINAS
FACULDADE DE ODONTOLOGIA DE PIRACICABA
ÁREA DE ODONTOPEDIATRIA

Número: _____

Dados sociodemográficos

Nome:_____

Data de nascimento: / / Idade: Sexo: F ( ) M ( )

Cor da pele (auto-referido): ( )branco ( )pardo ( )negro ( )amarelo ( )Outro____

Endereço:_____

Telefones:_____

Estado civil: ( ) Solteiro ( ) Casado ( ) Divorciado ( )Outros_____

Grau de instrução: ( ) Sem escolaridade ( )1º grau ( )2º grau ( ) Superior

Grau de instrução dos responsáveis:

Pai : ( ) Sem escolaridade ( )1º grau ( )2º grau ( ) Superior

Mãe: ( ) Sem escolaridade ( )1º grau ( )2º grau ( ) Superior

Outros: ( ) Sem escolaridade ( )1º grau ( )2º grau ( ) Superior

Renda familiar (salários mínimos): _____

Avaliação antropométrica:

Peso (kg): _____ Estatura(cm):_____ IMC(kg/m^2): _____

História médica:

Faz uso de medicamentos de uso crônico? ( ) não ( ) sim

Se sim, quais ? _____

Hábito de fumo: ( )não ( )sim.

Se sim, com que frequência e quantos maços por dia? _____

Utiliza bebida alcoólica : ( )não ( )sim.

Se sim, com que frequência? ( ) diariamente ( ) semanal ( ) mensal

Apresenta algum problema de saúde? ( )não ( ) sim

Se sim, quais? _____

Número de dias que fumou nos últimos 30 dias

[ ] Nunca fumei

[ ] Nenhum dia nos últimos 30 dias

[ ] 1-5

[ ] 6-19

[ ] 20 ou mais

Número de dias que fumou pela última vez?

[ ] Parei de fumar

[ ] Hoje

[ ] 1 dia atrás

[ ] 2

[ ] 3

[ ] Mais de 3

Se parou de fumar, há quanto tempo?_____

Fuma quantos cigarros por dia em média?_____

Exame periodontal (CPI da OMS)

16 11 26

Anexo 1

Certificado Comitê de Ética em Pesquisa

COMITÊ DE ÉTICA EM PESQUISA
FACULDADE DE ODONTOLOGIA DE PIRACICABA
UNIVERSIDADE ESTADUAL DE CAMPINAS

CERTIFICADO

O Comitê de Ética em Pesquisa da FOP-UNICAMP certifica que o projeto de pesquisa **"Avaliação dos estilo de vida, auto relato do tabagismo, condição periodontal e níveis de biomarcadores salivares em adolescentes"**, protocolo nº 074/2014, dos pesquisadores Samuel de Carvalho Chaves Junior e Maria Beatriz Duarte Gavião, satisfaz as exigências do Conselho Nacional de Saúde - Ministério da Saúde para as pesquisas em seres humanos e foi aprovado por este comitê em 10/09/2014.

The Ethics Committee in Research of the Piracicaba Dental School - University of Campinas, certify that the project **"Evaluation of lifestyle, self-report of smoking, periodontal status and levels of salivary biomarkers in adolescents"**, register number 074/2014, of Samuel de Carvalho Chaves Junior and Maria Beatriz Duarte Gavião, comply with the recommendations of the National Health Council - Ministry of Health of Brazil for research in human subjects and therefore was approved by this committee on Sep 10, 2014.

Prof. Dr. Felippe Bevilacqua Prado
Secretário
CEP/FOP/UNICAMP

Profa. Dra. Lívia Maria Andaló Tenuta
Coordenadora
CEP/FOP/UNICAMP