

Oral health in adolescent smokers at the Armando de la Rosa Polytechnic Institute of Informatics

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Abstract

Introduction. Tobacco use in children and adolescents is already a major health problem and has a negative influence on oral health. The oral cavity is one of the areas where the harmful effects of tobacco are most easily recognized. Objective: To describe the oral health of adolescent smokers at the Armando de la Rosa Polytechnic Institute of Informatics.

Materials and methods. A cross-sectional descriptive observational study was carried out in the period from September 2023 to October 2024. Theoretical, empirical and mathematical statistical methods were used. The variables used were: age, sex, time of smoking addiction, oral diseases according to the time of smoking addiction, perception of the risk of smoking and knowledge about the effect of smoking on the oral cavity.

Results. 58.5% belonged to the female sex, and (58.5%) to the 17 to 18 age group. The time of smoking addiction of more than one year (46.3%). Periodontal disease affected 92.7% of adolescents. Knowledge about the effect of smoking on the oral cavity was insufficient in 75.6%, the perception of risk of smoking was inadequate in 61.0%.

Conclusions. Females and the 17-18 age group predominated; as well as adolescent smokers over one year of age, with periodontal disease and dental caries predominating. Insufficient knowledge about smoking in the oral cavity and inadequate risk perception of smoking prevailed.

Keywords: adolescent; smoking; oral health

Introduction

The World Health Organization (WHO) defines adolescence as the period of human growth and development that occurs after childhood and before adulthood, between the ages of 10 and 19. ⁽¹⁾

Adolescents are an age group of great importance, the impact that can be had on their behaviors will influence the development of their way of life and lifestyles, currently adolescents are surrounded by a world that invites them to technology to socialize, learn and entertain themselves. Therefore, it is the faculty of the personnel involved in health education to take advantage of the various strategies offered by the environment, in order to promote healthy lifestyles. ⁽²⁾

Smoking is considered a universal epidemic and is a burden on the individual, the family and society. It is classified as a chronic systemic

disease, belonging to the group of addictions. It is one of the main risk factors for multiple diseases. ⁽³⁾

They consider it one of the epidemics of the twentieth and twenty-first centuries; another important factor to take into account is that the habitual consumption of tobacco is the cause of deaths, but without a doubt they can be avoided, even if it pretends to be an elegant habit. The World Health Organization (WHO) indicates that there are more than 1300 million smokers worldwide, representing approximately one third of the population over 15 years of age ⁽⁴⁾

90% of smokers start the habit before the age of 19 and problems of behavioural disorders such as shyness and aggressiveness have been detected in children and adolescents who smoke, which is interpreted as a risk for the

subsequent consumption of other substances or drugs such as marijuana, cocaine, cocaine, cocaine, stimulants and sedatives⁽⁵⁾

The oral cavity is the part of the body that has the first contact with tobacco with its compounds and emissions, which is why it is more frequent to suffer various types of pathologies and carcinogenic effects, microbial and immunological alterations. The main pathologies present due to tobacco consumption are: stains on teeth due to the effects of nicotine and tar combustion, increased caries due to low salivary flow production, periodontal disease, halitosis and leukoplakia.⁽⁶⁾

Smoking is a widespread drug addiction throughout the world that reaches a global prevalence of 47% in the population.⁽⁵⁾

24% of young people consume tobacco daily worldwide and the prevalence increases by more than ten points in university students, which is explained by factors such as academic stress and the influence of the group, which favor the initiation and/or consolidation of this habit at this stage of life. In addition, the time to develop a physical and psychological dependence on nicotine is two years, from the time young people try tobacco. As a result, during their time at university, 30% of young people will develop addiction to tobacco and will have difficulty quitting.⁽⁷⁾

In Cuba, of the top ten causes of death, eight are related to this addiction. Among the countries of the Americas, the aforementioned country ranks fifth in prevalence of smoking, with 23.7%; There are more than 2 million smokers, four out of 10 men smoke (41.4%) and two out of 10 women (23%).⁽⁸⁾

The perceived severity associated with smoking is related to the smoker's perception of the serious damage that tobacco or cigarette consumption causes him or her and, at the same time, being aware of the loss of health due to this addiction. It is vitally important that the smoker achieves a greater perception and, in this way, proposes to take actions in order to recover the health lost due to smoking.⁽⁹⁾

The Cuban Anti-Smoking Program arose with the purpose of promoting and protecting the oral cavity and the body in general. Despite the disclosure of the consequences and complications for oral health, there are still people who are unaware of the damage it causes, or do not achieve positive changes in their attitudes towards the habit.⁽¹⁰⁾

From the analysis of the health situation of the Provincial Teaching Stomatological Clinic of the northern area of Sancti Spiritus, it has been found that smoking is a latent risk factor in adolescents, who do not have sufficient knowledge in oral health issues and their attitudes towards health are not the most favorable. It is important to know the behavior of oral health in high school students who practice smoking, due to the prevalence of this addiction in adolescence, a stage in which they are usually subjected to greater stress loads due to the high teaching demand, as well as the

knowledge and perception about tobacco addiction and the oral diseases associated with the habit, which will allow us to carry out educational activities aimed at this group population

Taking into account the above and the insufficient research approach to the problem in the territory, it was proposed: to describe the oral health of adolescent smokers at the Armando de la Rosa Polytechnic Institute of Informatics.

Method

A cross-sectional descriptive observational study was carried out in the period from September 2023 to October 2024. The population consisted of all adolescent smokers who belong to the Armando de la Rosa Polytechnic Institute of Information Technology (133), the sample was made up of 41 adolescents based on simple random probabilistic sampling, who met the inclusion criteria and gave their consent to participate in the study. The variables used were: age, sex, time of smoking addiction, oral diseases according to the time of smoking addiction, perception of risk of smoking, knowledge about smoking and the oral cavity. The research was developed in a stage of: diagnosis.

Diagnostic stage: the topic under study was communicated to the management and scientific council of the health institution. Patients included in the study were provided with detailed information and a request for informed consent. The oral examination was performed and the History was made Clínica Individual para recoger la información de los adolescentes relativo a sus datos sociodemográficos.

The knowledge survey on smoking and oral cavity was applied.⁽¹¹⁾

A questionnaire⁽¹²⁾ was used to explore the perception of risk about smoking. It consists of 15 items to which the answer is made using a Likert-type scale, where one represents total disagreement and five is always or totally agree. The study was carried out with prior consultation, review and approval by the ethics committee of the institution and the management of the Armando de la Rosa Polytechnic Institute of Informatics, municipality of Sancti Spiritus, and then obtained the consent of the students to participate in the research, taking into account the ethical principles established in the Declaration of Helsinki.

Results

In the population studied, the highest percentage of adolescent smokers corresponded to the female sex with 58.5%, the most representative age group was 17-18 years (58.5%). (Table 1)

Age group	Female		Male		Total	
	No	%	No	%	No	%
15-16	9	21,9	8	19,6	17	41,5
17-18	15	36,6	9	21,9	24	58,5
Total	24	58,5	17	41,5	41	100

Table 1: Adolescents according to age and sex.

Table 2 shows the time of smoking addiction in adolescents, where the habit prevailed in more than one year (46.3%), and only 19.1% practiced it less than a year ago.

Time of addiction smoking	Female		Male		Total	
	No	%	No	%	No	%
Less than a year	5	12,2	3	7,3	8	19,1
One year	9	22,0	5	12,2	14	34,1
More than a year	10	24,4	9	21,9	19	46,3
Total	24	58,5	17	41,5	41	100

Table 2: Adolescents according to smoking addiction time

When evaluating oral conditions, a predominance of periodontal disease was evidenced in 92.7%; affecting more those who had been practicing for more than a year (46.3%), followed by dental caries with 63.4%. Lesions were found in the oral mucosa of an adolescent, representing 2.4% of smokers who have been practicing this habit for more than a year. (Table 3)

Smoking Addiction Time	Caries dental		Periodontal disease		Lesions of the oral mucosa	
	No	%	No	%	No	%
Less than a year	3	7,3	5	12,2	—	—
One year	10	24,4	14	34,1	—	—
More than a year	16	39,0	19	46,3	1	2,4
Total	29	63,4	38	92,7	1	2,4

Table 3: Oral conditions of adolescent smokers according to the time of consumption

75.6% of the adolescents who participated in this study have insufficient knowledge about the harmful effects of smoking on the oral cavity. Despite the promotional actions carried out in primary care, only 24.4% reached a sufficient level of information (Table 4)

Sex	Enough		Insufficient	
	No	%	No	%
Female	7	17,1	17	41,5
Male	3	7,3	14	34,1
Total	10	24,4	31	75,6

Table 4: Knowledge about smoking and the oral cavity by sex in adolescents

The perception of risk of smoking was inadequate, 61.0% according to the sample studied, and 37.1% of the female sex. (Table 5)	Female		Male		Total	
	No	%	No	%	No	%
Risk perception						
Adequate	7	17,0	3	7,3	10	24,4
Partially adequate	4	9,8	2	4,9	6	14,6
Inadequate	13	31,7	12	29,3	25	61,0

Table 5: Perception of the risk of smoking by sex in adolescents

Discussion

In the present research, the age group between 17 and 18 years and the female sex predominated, truly alarming results if we take into account the multiple preventive campaigns that are carried out in the country against this harmful habit, coinciding with the results obtained by Lorenzo-Felipe D, et al. ⁽¹³⁾ Galbe Sánchez-Ventura J, et al. ⁽¹⁴⁾ and Bouza Vera M, et al. ⁽¹⁵⁾ However, it differs from Valdés Sardiñas SA et al. ⁽⁵⁾ where smoking was manifested in 64.6% of all those studied, with a predominance of males.

The results of the study differ from those found by Espinoza Aguirre A, et al. ⁽¹⁶⁾ where they refer that tobacco consumption is a practice highly conditioned by gender, where there is an association between the male sex and the prevalence of current tobacco consumption.

The authors report that smoking is part of the culture and customs of the Cuban population, in which the health team plays a great role in carrying out educational prevention activities to avoid the habit, in addition to offering treatment to people interested in quitting smoking and rehabilitation to ex-smokers.

Smoking in the adolescents studied dates back more than a year and more frequently in females.

Similar to the results Martín Suárez M de los Á, et al. ⁽¹⁷⁾ where they found that the majority of adolescents started the habit after the age of 15, 31 young people, representing 60.8%, followed by those who started between the ages of 12 and 14 years, 16 smokers (31.4%)

Smoking causes dissimilar damage to the body. The oral cavity is one of the areas where the harmful effects of tobacco are most easily recognized. ⁽⁵⁾

A high percentage of adolescents with periodontal disease was found to be related to the time of cigarette consumption. Similar results were found by Valdés Sardiñas S.A., et al ⁽⁵⁾. También se coincide con los resultados Bouza Vera M, et al ⁽¹⁵⁾, Gutiérrez Solano MP, et al ⁽¹⁸⁾

The authors state that smoking influences periodontal disease by releasing epinephrine that causes vasoconstriction and relative anoxia of the capillaries of the gum, by a transient decrease in the potential for oxidation and reduction; as well as the deterioration it can have on leukocyte function.

The indicators obtained in this study; dental caries was another of the oral conditions that predominated in adolescent smokers. These results are similar to those reported in other studies that have described in detail the adverse effects of smoking on the maintenance of oral health as a determining element for the prevention of dental caries, related to risk factors and lifestyles of the population. ^(15, 19, 20)

In the opinion of the researchers, as the time of smoking addiction in adolescents increases, dental caries and periodontal disease increase their prevalence, which causes the presence of stains on the tooth surfaces, allowing the accumulation of dental plaque, a risk factor for dental caries and periodontal disease.

The adolescents who participated in this study have insufficient knowledge about the harmful effects of smoking on the oral cavity, results similar to Renda Valera L, et ⁽¹¹⁾ Leyva, E. H. P, et al. ⁽²¹⁾, Martell Martínez M et al ⁽²²⁾

In the opinion of the authors, adolescents know that when smoking, they can die from heart or lung involvement, but they are unaware of the effects on oral health. In addition, it is considered that the country has potential to develop health promotion strategies where health professionals involve teachers, since when they teach, they do it naturally, with professionalism, they are believed and they try to imitate them or do what they indicate, and in the school itself the results found in adolescents can be modified. The perception of the risk of smoking was inadequate, similar to the study by Pérez Martínez D et al ⁽⁹⁾ who before the intervention had a predominance of low perceived severity, manifested in 62.2 % of the cases and after the intervention developed, 95.6 % of the people presented a high perceived severity. Similar also with the research Herrera-Santí P, et al ⁽²³⁾

The results of the study differ from those found by Fernández-Castillo E, et

al.⁽¹²⁾ where it has been shown that women have higher levels of risk perception regarding tobacco consumption.

The authors consider it necessary to adapt the perception of risk with respect to tobacco consumption in adolescents, it should not only focus on the informative aspects, although their importance is recognized, but this dimension should be transcended, and favor the incorporation of this knowledge into the personal functioning of each student, in addition it is necessary to apply educational intervention strategies, that emphasis be placed on el efecto del tabaco con respecto a la salud bucal y elevar la percepción del riesgo del hábito de fumar para la salud bucal.

Las principales limitaciones de esta investigación se relacionan con la no valoración de los factores de riesgo de los adolescentes con hábitos de fumar.

Conclusions

The study was dominated by females and the 17-18 age group; as well as adolescent smokers over one year of age, with periodontal disease and dental caries predominating. Insufficient knowledge about smoking and its effects on the oral cavity and inadequate risk perception of smoking prevailed.

Conflict of interest.

The authors declare that there is no conflict of interest

Contribution of the authors.

All authors participated in the conceptualization, formal analysis, project management, writing – original draft, writing – review, editing and approval of the final manuscript.

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