

# Prevention of Smoking in Scholarship Students of the Faculty of Medical Sciences of Artemisa

**Running Title:** *Prevention of Tobacco use Disorder in Scholarship Students of the Faculty of Medical Sciences of Artemisa*

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## Abstract

**Introduction:** Young people expose dissimilar reasons as justification for tobacco consumption. The presence of smoking in university students studying medicine and nursing becomes a challenge for institutional authorities, in their purpose of solving the health problem.

**Objective:** to design an action plan for the prevention of smoking in scholarship students of the Faculty of Medical Sciences of Artemisa.

**Methods:** a descriptive, prospective longitudinal study was developed with 211 smoking scholarship students from the aforementioned entity in the period from January 20 to March 25, 2020. Procedures were used such as: documentary review, observation, survey, focus group, brainstorming, and cause and effect diagram. Results: 22 causes were identified that favored the increase in smoking, six correspond to strategic and organizational gaps; seven are related to teachers; five correspond to the methodological teaching process and four are linked to educational work. Likewise, an action plan focused on seven objectives, 18 activities and four indicators was developed to evaluate the implementation process.

**Conclusions:** The smoking prevention strategy applied to smoking scholarship students at the Faculty of Medical Sciences of Artemisa does not ensure the reduction of this toxic habit, which is potentially vulnerable with the proposed action plan.

**Keywords:** scholarship students; smoking; educational work; Artemisa; tobacco; medical sciences

## Introduction

Young people expose dissimilar motives as a justification for tobacco consumption. The presence of smoking among university students studying medicine and nursing becomes a challenge for institutional authorities in their attempt to solve the health problem. Objective: to design an action plan for the prevention of smoking in scholarship students of the Faculty of Medical Sciences of Artemisa. Methods: a descriptive, prospective longitudinal study was developed, with 211 scholarship students' smokers of the mentioned entity in the period from January 20 to March 25, 2020. Procedures used were: documentary review, observation, survey, focus group, brainstorming, and cause and effect diagram. Results: 22 causes favoring the increase in smoking were identified, six correspond to strategic and organizational gaps; seven are related to teachers; five correspond to the methodological teaching process and four are linked to educational work. Likewise, an action plan focused on seven objectives, 18 activities and four indicators were elaborated to evaluate the process of its implementation. Conclusions: The smoking prevention strategy applied in smoking scholarship students of the Faculty of Medical Sciences of Artemisa, does not ensure the reduction of this toxic habit, which is potentially vulnerable with the proposed action plan.

Smoking is considered a public health problem due to its magnitude, the health consequences it entails and the high economic and social costs. Its effects are harmful to consumers and to those who are passively exposed to its smoke, with or without awareness of its harmfulness. Science has shown that tobacco use is a cause of morbidity, mortality and disability [1].

The World Health Organization (WHO), [2,3] declares that the prevalence of tobacco consumption is decreasing in the world. Experts currently estimate approximately 1.3 billion smokers, compared to 1.32 billion in 2015. Effective and comprehensive policies, driven by the Framework Convention on Tobacco Control in 2003,4,5 are shown. legal instrument governed by international law and mandatory for the countries that sign and ratify it. This trend can also be seen in the Americas region; the average consumption rate went from 21% in 2010 to 16% in 2020,6.

In Cuba, one in five people aged 15 and over smokes. It is equivalent to 21.6% of the population, which represents 2,014,460, according to the results of the National Health Survey in December 2019. It is noted that more than 13,000 deaths occur per year as a result of smoking, 36 Cubans die every day and two Cubans die every hour from active tobacco use. Also, due to passive smoking, four people die in the country every 24 hours [7,8].

These data lead us to reflect on how much remains to be done in terms of health promotion and education, if we aspire to modify consumption patterns. The expert Suárez Lugo, [9] states that "the legal regulations aimed at reducing the consumption of cigarettes in Cuba are insufficient, both in their express content, and in their compliance to achieve such purpose."

In relation to the aforementioned figures, the onset of addiction in Cuba occurs from adolescence, with an average age of 17.4 years, which constitutes a safe replacement for active smokers in adulthood [7,10].

Some young people start using cigarettes when they enter college; those students who had been smoking before are more likely to increase the frequency and amount of tobacco consumption. It becomes a context of social reinforcement where behaviors that induce its consumption are

promoted, without forgetting those aspects that favor its use, such as advertising, availability and free accessibility [1,11].

For González and Sánchez, [12] the approach to the knowledge of the personality allows the identification of the individual's motivations, and therefore, an analysis of their behavior. Some researchers have reported characteristics associated with consumption in university students, such as a family history of smoking, smoking friends, high availability of money, stress, advanced semesters of the degree, having a desired social image, or as a facilitator for establishing interpersonal relationships [13].

The effects of smoking in adolescence are diverse: lack of independence and the feeling of control imposed by the drug, is related to the worsening of memory, attention and observation. Similarly, deterioration of body image, halitosis, stains and dental caries, stomatitis, periodontal diseases, and dysphonia; In addition, growth and hormonal effects, reduced physical performance, delayed pubertal development. Also, alterations in the respiratory, cardiovascular, cerebrovascular and reproductive systems. As well as postoperative and healing complications. In turn, it is associated with different types of cancer, due to mutations in DNA [14-17].

The protection of the health of young people becomes a challenge for professional health organizations, in order to achieve the reduction of tobacco consumption. In the actions with a view to modifying behaviors harmful to health due to smoking, and to comply with the Program for the Prevention and Control of Smoking, [18] not only the Ministry of Public Health (MINSAP) is involved, but also other ministries that they have responsibility and tasks in it. Regarding Cuban legislation, Resolution No. 360/2005 of the MINSAP, [19] and Agreement 5570/2005 of the Executive Committee of the Council of Ministers, constitute essential legal documents.

The province of Artemisa has a high prevalence of 81,963 smokers for a rate of 16.28, which is a risk factor due to the increase in the number of cases with malignant tumors in the province. The health authorities declared that in 2020, 1,186 people died with cancer disease, for a rate of 230.3 and ranks second among the main causes of death in that territory. In 2019, 214 smokers were declared in the age group between 10-14 years, with an increase of 107 compared to the year 2018 [20,21].

There is a Preventive Strategy at the provincial level against smoking, whose purpose is to contribute to the reduction of smoking in the population, mainly adolescents. Its objectives, work with individuals, families, communities and society to ensure a comprehensive approach to the problem of smoking; integrate the participation of the social sectors; prepare the population to act against smoking and exercise their right to a smoke-free environment; encourage young people to take responsible care of their health and adopt healthy lifestyle habits [20].

For the authors, it is contradictory that university students of medicine and nursing careers have the habit of smoking, which becomes a social reinforcer and distances them from the population sector to whom they transmit health education messages, focused on behavior anti-smoking. This implies an ethical dilemma because society requires an active and consistent role of these health professionals.

In the Faculty of Medical Sciences of Artemisa, it has been verified within the bank of problems, the increase of scholarship students with frequent consumption of cigarettes.

The research was proposed as an objective: Develop an action plan for the prevention and reduction of smoking in scholarship students of the Faculty of Medical Sciences of Artemisa.

## Methods

**Type of study:** a descriptive, longitudinal prospective study was carried out in scholarship students of medicine and nursing careers, belonging to the Faculty of Medical Sciences of the province of Artemisa in the period from January 20 to March 25, 2020.

**Universe and sample:** a universe of 211 smoker scholarship students was studied. It worked with the entire universe.

**Variables and Data collection:** methods and techniques were used for data collection and measurement of variables: documentary review, observation, survey, focus group, brainstorming, and cause and effect diagram.

For the systematization of the background and topicality of the subject, the documentary review of the laws, guidelines, resolutions, regulations, programs and other documents of the Ministry of Public Health, related to the prevention of smoking in this sector, in particular, with higher medical teaching centers.

An observation guide was used that made it possible not only to verify tobacco consumption; In addition, evidence related to institutional preventive and educational actions was obtained, without ignoring the perceived deficiencies.

A survey was applied to all the scholarship students of the center, which allowed the characterization of consumers, their perception of risk, and knowledge of regulations in the preventive order.

A brainstorm was developed with the focus group created for the purpose of the research with leaders of the University Student Federation (FEU), guide teachers and informal leaders, in order to identify the barriers in the reduction of consumption and addicts to alcohol. smoking. The information was represented by categories in a cause-effect diagram, for analysis.

As a subsequent step to the diagnosis, an action plan was designed for its presentation and approval by the Board of Directors of the Faculty of Medical Sciences of Artemisa.

## Statistical processing:

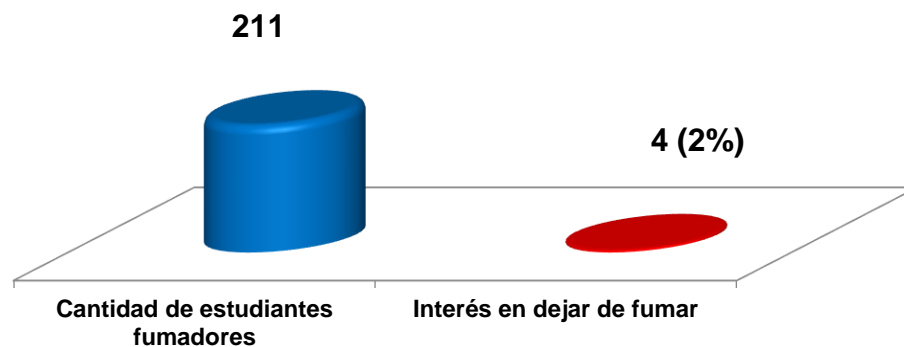
Once the research was completed, a database was created in Microsoft Excel, which was exported to the Epi Info v6 program where the summary measures of the variables studied were calculated, in absolute frequencies and percentages. Qualitative information was processed through content analysis, and triangulation allowed checking the concordance of the data and arriving at the identified categories. Subsequently, tables and graphs were built considering the type and number of variables to be represented.

**Ethical standards:** the research complied with the Declaration of Helsinki approved at the 18th World Medical Assembly in 1964 and ratified at the 64th General Assembly in October 2013. Confidentiality was maintained at all times regarding the identity of the scholarship students and the results obtained were not used for other purposes outside the framework of the research. The study was approved by the Ethics Committee and the Scientific Council of the institution.

## Results

The observation allowed the appreciation of a consumption of cigarettes in closed areas (shelters), open and perimeter. There was no provision of public ashtrays in the institution; Active consumption can be inferred from the presence of cigarette butts and cigarette packs on the ground in and around the shelter. Smoking areas were not marked out. The teachers required the students when they smoked in the institution, which was verified during the investigation process (on 15 occasions).

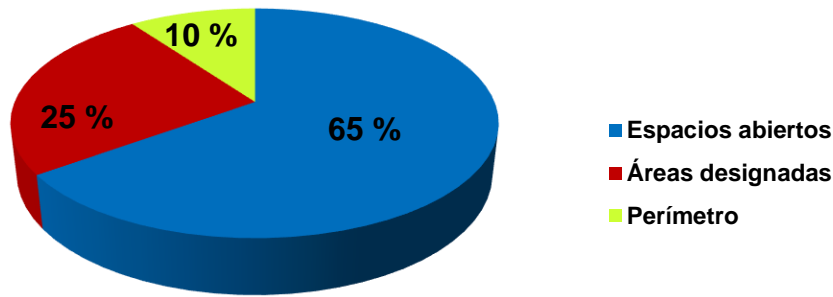
In the survey carried out, 100% of the participants (145 from medicine and 66 from nursing) stated that they had knowledge about the risks associated with health as a result of smoking. Likewise, they referred to the existence of institutions where they could resort to receive smoking cessation treatment. However, among smokers, only 2% showed interest in quitting. (Figure 1)



**Figure 1:** Smoker scholarship students interested in giving up the habit belonging to the Faculty of Medical Sciences of the province of Artemisa in the period from January 20 to March 25, 2020.

Source: Table 1

The subjects surveyed are unaware of the regulatory regulations regarding tobacco consumption. However, the majority (65.0%) state that you can only smoke in open spaces. (Figure 2)



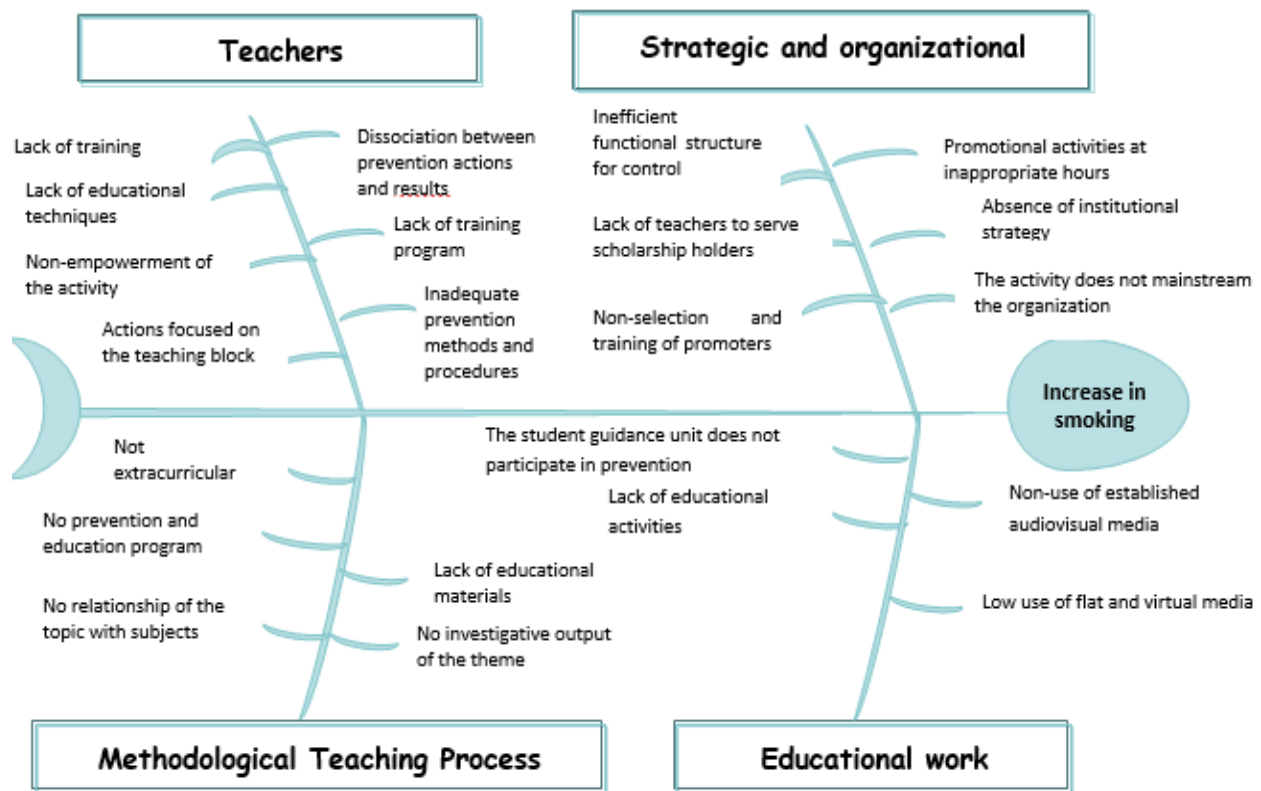
Source: Table 2

**Figure 2:** Scholarship students who smoke according to knowledge of the regulatory norm.

On the other hand, 15.0% assume that one of the actions carried out in the center on the occasion of the world day against smoking is graphic advertising. Similarly, they do not perceive demands on smokers during their consumption, and the minimum standards of respect for non-smokers' spaces are violated.

From the data in the brainstorming, developed with the focus group, the cause-effect diagram (Ishikawa) is made, in order to identify the factors to control to obtain results (Figure 3).

Twenty-two main causes were identified that favored the increase in smoking in scholarship students from the Faculty of Medical Sciences of Artemisa, six correspond to strategic and organizational gaps; seven are related to teachers; five correspond to the methodological teaching process and four are linked to educational work (Figure 3)



Source: Table 3

**Figure 3:** main causes that affect the increase in smoking in scholarship students.

### Discussion

From the results of the applied survey, the observation guide, the focus group and the analysis of the cause-effect diagram, difficulties are evident in the strategy implemented for the prevention and reduction of smoking:

- ❖ Presence of consumers in scholarship students: it is described in graph 1 and is inferred by corroborating the presence of cigarette butts and cigarette packs on the ground, in and around the shelter, appreciated in the observation developed during the investigation, which acquires relevance if we consider that it had been incorporated as a theme to the bank of problems of the

institution, due to the concern of the province of Artemisa due to the high prevalence of smokers.

- ❖ Lack of knowledge of the institutional regulations for the prevention of smoking: it became clear during the investigation when it was identified that only 15.0% of scholarship students who smoke were aware of the preventive guidelines, so the necessary information channels do not exist and they do not perceive smokers demands during their consumption in the institution, which translates lack of empowerment of teachers and promoters with the activity, as was collected in the group dynamics carried out.
- ❖ The non-execution of preventive actions: scarce information and advertising material used and insufficient use of the spaces available for promotion (non-use of the established audiovisual media and flat and virtual broadcasting) can be seen.
- ❖ The low perception of the risk of tobacco consumption for their health, for passive consumers and for the global social cost that it represents in the attention to diseases associated with smoking: which was evidenced by the fact that only 2.0 % of smokers showed interest in quitting smoking despite the fact that all reported having knowledge about the risks associated with health. On the other hand, the violation of the minimum standards of respect for non-smoking spaces is evident.
- ❖ The absence and/or ineffectiveness of the corrective measures taken in the event of non-compliance with the regulations established to prevent or reduce institutional smoking: it was evidenced that the disciplinary measures are mostly fulfilled in the teaching block, where it was verified on 15 occasions during the investigation process, the brief warning of the prohibitive sign or just the indication to put out the cigarette, without the particular analysis of the risks with an educational approach.
- ❖ No other measure was found with repeat offenders, and tolerance with the consumption of cigarettes by student leaders was appreciated during the study.

#### **Actions to prevent and reduce the increase in smoking in scholarship students of the faculty of medical sciences of artemisa:**

The plan of actions for the prevention and reduction of smoking, as well as to increase the levels of potential health in the scholarship students, was conceived with an integrality, centered on seven objectives, 18 activities with their execution schedule and four indicators to evaluate the process of its implementation.

The objectives are:

- Strengthen the working group responsible for the methodological application of the smoking prevention and reduction strategy in the institution.
- Increase educational work through health promotion activities, aimed at the prevention and control of smoking, which are attractive and of interest to the target population.
- Raise the level of knowledge of teachers and promoters in the aspects that support and guide the fight against smoking.
- Develop in teachers and promoters, skills in educational techniques and procedures for the prevention and reduction of smoking in medical science students.
- Incorporate the anti-smoking theme in classes of related subjects and in the development of extracurricular and research activities.
- Integrate the student orientation unit to the institutional strategy of prevention and reduction of smoking in students.

The following indicators are included to evaluate the process:

- Number of scholarship students who give up or reduce smoking: calculated by years of study (semester analysis).

- Total health promotion and/or extracurricular activities carried out (activities carried out / activities programmed per 100). More than 90% of the activities carried out are considered acceptable. (Quarterly analysis).
- Attendance of scholarship students to the activities carried out: expresses the number of scholarship students who attended, in relation to the total number of scholarship students (participants/total scholarship students per 100). More than 90% attendance of the scholarship students to the activities was taken as acceptable (quarterly analysis).
- Professors and promoters who participated in the coordination of activities: expresses the ratio of the number of coordinating professors (active) in relation to the total number of professors (active professors / total professors per 100). The active participation of 50% of the professors of both careers was considered acceptable (biannual analysis).

Other investigations carried out in Cuba emphasize the understanding of the characteristics of risk perception regarding tobacco consumption, from a dynamic, multidimensional and contextualized perspective. Educational work should not only focus on informative aspects, although its importance is recognized, but it should go beyond this dimension, it is essential to activate motivational mechanisms to promote a change in behavior [8,10].

The results in international contexts also point to the implementation of modifications in the performance of students who will become future health promoters and to carry out actions before starting university [3,11,13].

#### **Conclusion**

The smoking prevention strategy that is applied to scholarship students from the Faculty of Medical Sciences of Artemisa does not ensure the reduction of this toxic habit. The main aspects that determine the increase in smoking in medical science scholarship students at Artemisa are related to six strategic and organizational causes, five belong to the methodological teaching process, seven are linked to teachers and four are linked to educational work. An action plan was designed to improve the prevention and reduction of smoking in scholarship students of the Faculty of Medical Sciences of Artemisa, focused on seven objectives, 18 fundamental activities and four indicators to evaluate the implementation process.

**Conflict of interest:** The authors declare that there are no conflicts of interest.

#### **Authorship:**

JFRH: conceptualization of ideas, methodology, formal analysis, writing-original draft, visualization-preparation, writing-revision and edition.

IFMG: conceptualization of ideas, methodology, formal analysis, writing-original draft, visualization-preparation, writing-revision and editing.

DGC: conceptualization of ideas, methodology, data curation, formal analysis, research, visualization-preparation and writing-original draft.

IEFD: methodology, formal analysis, writing-review and editing.

MBLP: resources, writing-revision, visualization-preparation and edition, validation-verification.

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