ORIGINAL



Oral cancer and its main risk factors in adolescents: a social problem of science

Cáncer bucal y sus principales factores de riesgo en adolescentes: problema social de la ciencia

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Cite as: Abraham-Millán Y, Montano-Silva RM, Aragón-Mariño T, Cardentey-García J, Peguero-Morejón HA, Núñez-Pérez BM. Oral cancer and its main risk factors in adolescents: a social problem of science. Salud, Ciencia y Tecnología. 2025; 5:1619. https://doi.org/10.56294/ saludcyt20251619

Submitted: 17-09-2024

Revised: 06-02-2025

Accepted: 08-06-2025

Published: 09-06-2025

Editor: Prof. Dr. William Castillo-González 回

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ABSTRACT

The incidence of oral cancer has been increasing alarmingly, and although it is more prevalent in older adults, a growing incidence has been seen in increasingly younger populations. Adolescents not only begin to experience physical and emotional changes, but are also exposed to various risk factors that can contribute to the onset and adverse outcome of this type of cancer. Qualitative research was carried out with the objective of analizing the main risk factors associated with the appearance of oral cancer in adolescents as a social problem of science. Empirical methods (documentary analysis) and theoretical methods (analytical-synthetic, inductive-deductive, historical-logical analysis) were used to conduct the research. The intersection of factors such as tobacco and alcohol use, HPV infections, social inequalities, cultural behaviors, and poor oral hygiene practices in adolescence paint a complex picture that cannot be ignored. It is imperative to address these risk factors through education, prevention, and access to health services.

Keywords: Oral Cancer; Risk Factors; Adolescents; Social Problem of Science.

RESUMEN

La incidencia del cáncer bucal ha ido aumentando de manera alarmante, y aunque es más prevalente en adultos mayores, se ha evidenciado una incidencia creciente en poblaciones cada vez más jóvenes. Los adolescentes no solo comienzan a experimentar cambios físicos y emocionales, sino que también están expuestos a diversos factores de riesgo que pueden contribuir a la aparición y evolución desfavorable de ese tipo de cáncer. Se realizó una investigación cualitativa con el objetivo de analizar los principales factores de riesgo asociados a la aparición de cáncer bucal en adolescentes como un problema social de la ciencia. Para el desarrollo de la investigación se utilizaron métodos empíricos (análisis documental) y teóricos (analítico-sintético, inductivo-deductivo, análisis histórico-lógico, enfoque de sistema). La intersección de factores como el uso de tabaco y alcohol, infecciones por VPH, desigualdades sociales, comportamientos culturales y prácticas deficientes de higiene bucal en la adolescencia delinean un panorama complejo que no puede ser pasado por alto. Resulta imperativo abordar esos factores de riesgo a través de la educación, la prevención y el acceso a servicios de salud.

Palabras clave: Cáncer Bucal; Factores de Riesgo; Adolescentes; Problema Social de la Ciencia.

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INTRODUCTION

Oral diseases are highly prevalent. Globally, 3,5 billion people suffer from oral diseases, which are closely related to non-communicable diseases and, therefore, generate a considerable health, social, and economic burden.⁽¹⁾

The word cancer refers to a group of more than 100 different diseases with more than 1000 histopathological varieties. A common characteristic is the abnormal and uncontrolled proliferation of cells that invade nearby and distant tissues and organs and, if not treated in time, lead to the death of the individual.⁽²⁾

One of the anatomical locations of this pathology is the oral cavity, which is why some authors have called oral cancer one of the top ten locations of cancer incidence in the world and Cuba.⁽²⁾ The economic and health consequences make it a significant health problem; moreover, with the increase in the incidence of risk factors associated with the appearance of this disease, it is thought that if control measures are not taken, there will be an increase in its incidence and mortality.⁽³⁾

As a malignant entity, cancer has a high mortality rate because four million people die each year worldwide from this disease, and if this trend continues, it will be considered the leading cause of death in this century.⁽⁴⁾

Oral cancers are among the most prevalent cancers worldwide, causing 180000 deaths per year, and in some countries, they are the leading cause of cancer-related mortality.⁽⁵⁾ The global economic burden and direct and indirect costs amount to US\$ 545 billion, making it one of the most costly health areas. Oral health problems, in addition to pain, discomfort, and lack of well-being and quality of life, lead to absenteeism from school and work.⁽⁷⁾

Among all cancers, oral cancer is the sixth most common cause of death worldwide. Every year, between 20000 and 25000 new cases appear worldwide, of which between 13000 and 14000 patients die.⁽⁸⁾ It is a disease to be taken into account in Cuba since four to seven out of every 100 cancers are of the oral cavity.⁽⁹⁾

The incidence of oral cancer has been increasing at an alarming rate, and although it is more prevalent in adults, detection in adolescents is an issue that deserves attention. In recent decades, it has gained notoriety because of its complexity and treatment and its increasing incidence in younger and younger populations.

Although it is commonly associated with lifestyles and unhealthy habits that usually manifest in adults, its occurrence in adolescents is becoming a growing concern for the scientific and medical community. Adolescents not only begin to experience physical and emotional changes but are also exposed to several risk factors that may contribute to the development and unfavorable evolution of this type of cancer.

Its occurrence in adolescents raises questions about the associated risk factors and its social, scientific, and cultural relevance. This issue affects not only those who suffer from it but also impacts their families, schools, and communities, making it a complex social problem. This phenomenon not only poses challenges in terms of health but also reveals social, cultural, and educational aspects that require attention and action.

Using a multidimensional approach, the authors of this research set out to analyze the main risk factors associated with the occurrence of oral cancer in adolescents as a social problem in science.

DEVELOPMENT

Historical context and current relevance

Oral cancer has been considered a disease that affects the organs that make up the stomatognathic apparatus, especially in people who have been exposed to cumulative risk factors throughout their lives. Early diagnosis is key and can significantly influence the patient's survival rate.

Historically, this type of cancer has been more common in older adults. However, in recent decades, an increase in the incidence of oral cancer in adolescents has been observed. According to the World Health Organisation (WHO), oral cancer is one of the most common cancers in people aged 15-44 years in some countries, demonstrating the importance of analyzing this trend.^(10,11)

This change can be attributed to several factors, including lifestyle changes, exposure to new substances, and increased risk behaviors. Traditionally, the main risk factors associated with oral cancer include tobacco use, alcohol abuse, and human papillomavirus (HPV) infection.

However, in recent years, concerns have arisen about the role of factors such as inadequate diet, poor oral hygiene, and exposure to environmental carcinogens. These changes have necessitated a closer and more targeted approach to the adolescent population, raising questions about how these factors interact in an age group not normally associated with such diseases.

Since the 1980s, there has been a remarkable increase in research on oral cancer. However, little attention has been paid to cancer in adolescents, which justifies its contemporary consideration as a social problem. Lack of appropriate research in this age group leads to late diagnosis and increased mortality.

Oral cancer in adolescents, although less common than in adults⁽¹¹⁾, represents a serious complication that can cause significant alterations in the quality of life of those who suffer from it and their families. Early detection and risk factor education are crucial to reduce the incidence and mortality associated with oral cancer in this age group.

Risk factors associated with the development of oral cancer:

Tobacco and alcohol use

Tobacco use is one of the significant risk factors associated with oral cancer.^(1,2) Although laws restricting access to tobacco products exist in many countries, availability and use among adolescents remain an essential problem. Exposure to second-hand smoke (so-called passive smoking) fluctuates wildly and is difficult to control.

On the other hand, alcohol consumption is also presented as an essential factor in the development of oral cancer.^(1,2) Adolescents who consume alcohol to excess are more predisposed to suffer from oral health complications, including the possibility of developing cancer.

Another interesting aspect among adolescents is that they consume alcohol and cigarettes in combination, which puts them even more at risk. It should be noted that in Cuba, the lifestyles of adolescents have changed negatively, which has led to a decrease in the age at which these habits begin.

Among adolescents, smoking and the use of smokeless tobacco products have increased, often driven by social pressure and accessibility; electronic cigarettes have become fashionable. Alcohol consumption, usually associated with smoking, also contributes to an increased risk of disease onset.

Studies have shown that heavy alcohol consumption, especially in combination with tobacco use, increases the risk of oral cancer. In a study of adolescents, it was found that young people who used alcohol and tobacco had up to six times the risk of developing oral cancer compared to those who did not.⁽¹²⁾

Human Papillomavirus (HPV) infection

HPV has emerged as a significant risk factor for the development of oral cancer, especially in those who initiate sexual intercourse at an early age. The relationship between this virus and oropharyngeal cancer has been widely documented⁽²⁾, and although it is most commonly associated with adults, its transmission among adolescents is of concern. The high prevalence of HPV in adolescents associated with earlier initiation of unprotected sex raises serious concerns about HPV transmission and oral cancer prevention.

A recent analysis indicated that adolescents who started their sexual life at a young age and had multiple sexual partners were at an elevated risk of HPV infection, which increases the likelihood of developing cancer in the future. These statistics highlight the need for comprehensive sexuality education that informs young people about the associated risks and the importance of HPV vaccination.⁽¹³⁾

Poor oral hygiene

Poor oral hygiene is another risk factor contributing to oral cancer. Lack of proper brushing and dental neglect can lead to the formation of potentially malignant lesions, which increases the likelihood of developing oral cancer later in life.⁽²⁾ A study in secondary schools revealed that more than 50 % of adolescents did not visit a dentist regularly, increasing the risk of minor problems developing into serious complications, including oral cancer.⁽¹⁴⁾

The misperception that oral health is not a priority during adolescence can lead to neglect that, in the long term, increases the risk of cancer. Education and prevention are essential to encourage oral hygiene habits from an early age.

Socio-economic and educational factors

The social determinants of health need to be analyzed in depth. Economic and educational inequalities can influence access to health information and resources. Lower-income or vulnerable communities often have less access to health services and preventive education.

• Education: Lack of knowledge about oral cancer and its risk factors among adolescents can result in underdiagnosis. Education is a key tool to combat this problem, and many educational institutions worldwide have begun to incorporate oral health programs.

• Access to health services: In communities that are vulnerable or distant from dental services, access to dental and medical check-ups is limited, leading to delays in diagnosis and treatment.

Exposure to chemicals

In addition, exposure to certain chemicals in the environment, either through the type of occupation of those legally responsible or through the use of beauty and cleaning products, can increase the risk. Exposure to carcinogenic chemicals has been linked to several types of cancer, including oral cancer.⁽²⁾ The presence of a cluster of risk factors associated with the development of oral cancer is responsible for a high risk of oral cancer.⁽¹⁴⁾

Culture and social behaviour

Cultural influences also play an essential role in managing and preventing oral cancer. Social norms that encourage the use of tobacco, alcohol, and chemicals, as well as a lack of discussion about oral health in

communities, can encourage unhealthy practices.

- Peer pressure: Adolescence is marked by a desire for acceptance. Peer pressure may encourage young people to compromise their health to fit in with certain social dynamics.
- Stigma and taboos: Difficulties in talking openly about sexual health and the risks associated with HPV are cultural impediments that may result in increased incidence.

Cultural and social perspectives

Oral cancer is not only a health problem but also has profound social implications. Cultural perceptions about oral health and the taboo surrounding discussions about cancer in adolescents may influence prevention and early diagnosis. Many cultures still associate cancer with stigma, which can result in adolescents not seeking medical care or avoiding talking about their symptoms.

Education plays a crucial role here: programs that integrate cancer education in schools could contribute to a greater understanding and, thus, decrease the incidence of the disease. Since social interaction and peer perceptions are crucial during adolescence, creating environments where these issues can be openly discussed is essential. By integrating oral health education into school curricula, adolescents can be empowered to take proactive action regarding their health. Initiatives involving policymakers, teachers, and communities are essential to building a support network for adolescents. Education is ideal for raising awareness and risk perception about oral cancer. Primary prevention should, firstly, motivate people, mainly young adults, through attractive proposals that achieve the massive and protagonist participation of patients, encouraging them not to start practicing inadequate health habits; secondly, those who already practice the habit should be encouraged to abandon it and, finally, to modify or reduce these habits.^(15,16)

The didactic methodology acts directly on the individual's motivation to change and influences the reception and assimilation of the message. It should be emphasized that there are no standard didactic techniques.⁽¹⁷⁾ Still, they must be adapted to consider the objectives and characteristics of the population with which one wishes to work. Increased knowledge does not automatically lead to lifestyle changes, but it is an essential step towards this.⁽³⁾

Changing harmful lifestyles into beneficial ones is a challenge for science. The presence of a cluster of risk factors associated with the development of oral cancer is the cause of a high risk of oral cancer.⁽¹⁷⁾

Individuals can individually contribute to positive lifestyle change within the community by identifying the likelihood of developing oral cancer, thereby improving their health and quality of life.⁽³⁾ Suppose adolescents are aware of the risk factors that influence them. In that case, they will be able to perceive the risks for themself, their family, and the community, which can turn them from an individual protagonist into a community health promoter.⁽¹⁷⁾

Critical analysis of counter-arguments

One argument that may be raised against focusing on adolescent oral cancer is that incidence rates remain low compared to other cancers. However, changing realities suggest that this perception may be outdated. It is imperative to highlight the increasing trend of this type of cancer in younger and younger populations and the urgency of addressing the problem from an evolving perspective.

Furthermore, adolescents are responsible for their choices and should ultimately take responsibility for their health. However, it is essential to recognize that adolescents are influenced by their environments. Incidents such as tobacco culture and peer pressure affect their health; therefore, responsibility must be shared between individuals, legal guardians, and society.

Despite the growing concern about oral cancer in adolescents, there may be arguments to suggest that education and prevention are unnecessary efforts due to the relatively low number of cases compared to other pathologies. However, the vitality of this discussion lies in several aspects:

• Prevention and early detection: a preventive approach can reduce the number of cases and facilitate early interventions that save lives. Ignoring the problem because of its current low prevalence could lead to a significant increase in future incidence.

• Social ethics: Society is responsible for protecting its adolescents' health. Failure to adequately educate them would disregard their well-being and future quality of life.

• Public health perspective: Although it may seem an isolated issue to some, adolescent health has implications that extend to the broader community. An adolescent whose oral cancer is diagnosed and treated early will have a much more positive future, not only in terms of health but also in terms of social and economic development.

• Policy perspective: Public policy must comprehensively address adolescent oral cancer. Prevention campaigns that focus on reducing alcohol and tobacco use among adolescents are essential. In addition, laws are needed to regulate the advertising and distribution of tobacco and alcohol products, even among adolescents, as well as the promotion of HPV vaccination programs.

Social implications

The implications of oral cancer in adolescents are extensive and multidimensional. Directly, the economic costs associated with treating this disease increase the burden on public health systems.

Prolonged treatment may not only involve significant medical expenses but also impact young people's ability to attend school and participate in social activities. From a broader angle, oral health reflects the general state of health in a community.

The prevalence of oral problems can indicate broader problems in terms of access to health care, health education, and economic resources. Public health policy must consider this reality and work to provide continuing education and adequate access to health services.

In addition, the development of policies that address adolescent oral health, including tobacco and alcohol regulations, is essential to improving the situation. Such policies should focus on restrictions and education and creating strategies and programs that enhance adolescent health.

With intersectoral and inter-ministerial work, it is possible to create a society that is more informed and active in its own health. It is imperative that both the scientific community and society at large continue to work together to address this challenge and ensure that the voice of adolescents is heard and counted in the fight against oral cancer.

Adolescent oral cancer is a social problem that involves not only individual health issues but also a collective responsibility. It has educational, social, and economic implications, making it an issue of contemporary relevance:

• Impact on society: the rise of diseases such as oral cancer affects the quality of life of individuals and their family environments. The disruption it creates can impact education, work, and interpersonal relationships. Healthcare costs can also increase, affecting communities and the healthcare system.

• Cultural impact: Society must recognize and treat diseases traditionally considered "taboo." Raising awareness and educating adolescents about these issues fosters a culture of care and self-care.

• Research ethics: Research on adolescent oral cancer should be a priority. More information and research are needed in this area and an ethic of equitable access to health care and health education.

Oral health is a key aspect of overall health, and its deterioration can impact adolescents' quality of life, self-esteem, and even academic performance. This health problem has repercussions not only at the individual level but also at the community and socio-economic levels.

Treatment can be costly (although free in Cuba, the state assumes these costs) and requires considerable time away from school, which affects adolescents' education. Attention to this problem, therefore, should not be relegated to the realm of health but requires a holistic approach involving the whole of society.

Moreover, the long-term costs of failing to address adolescent oral health may completely dwarf any expenditure made on education and prevention. Inaction could lead to an increased burden on health systems, making it urgent to implement effective strategies to combat this trend.

Cuba has had an Early Detection of Oral Cancer Programme (PDCB) since 1986; however, mass screening is compulsory for populations over 15 years of age and does not include adolescents.⁽¹⁹⁾ Furthermore, it establishes that every patient attending a dental consultation should be screened for PDCB; however, if the adolescent does not attend the consultation, it is impossible to be screened for PDCB. This is worrying, as many of them are exposed to risk factors associated with the development of oral cancer.

The National Dental Care Programme includes in its content several promotion and prevention activities to be implemented in different priority groups and age groups.

JUVEDENTI was designed to promote, prevent, cure, and rehabilitate at the primary and secondary care levels. It proposes the development of educational-recreational activities in the stomatological services together with the pediatric population during their stay in the service, such as plays, role plays, raffles, affective-participative techniques, knowledge mailboxes, dance competitions, knowledge, sports, according to the age, customs and health and learning needs of the children.⁽¹⁹⁾ In addition, it is worth mentioning that the country is going through a difficult situation where material resources are in short supply, and priority attention is given to pregnant women and, secondly, to primary schoolchildren who are screened for POP and CEO indices.

The authors point out that it is archaic and designed with outdated methodologies that no longer attract or motivate adolescents. The techniques must evolve by including families, teachers, and communities.

The authors aim to provide a solution to this social problem of science through innovation and technology by designing an educational strategy based on the secondary school curriculum, taking into account that it should include in its content educational programs (workshops, talks, information campaigns), training of health providers, technological learning resources, awareness of risk factors, among others.

There is no published educational strategy in Cuba for this specific problem in this age group, including the abovementioned aspects. The authors consider that such a strategy will not only help to resolve the incidence of potentially malignant lesions and oral cancer at an early age but also the appearance of other non-communicable diseases since they coincide in terms of risk factors.

CONCLUSIONS

The occurrence of oral cancer in adolescents represents a social problem that demands immediate attention. The intersection of factors such as tobacco and alcohol use, HPV infections, social inequalities, cultural behaviors, and poor oral hygiene practices paint a complex picture that cannot be ignored. Addressing these risk factors through education, prevention, and access to health services is imperative. Fostering an open understanding and discussion of oral health in this age group can help mitigate the increasing incidence of this disease. The scientific community and civil society are responsible for fostering a positive health culture among adolescents. A collaborative and multifaceted approach is essential to prevent oral cancer and ensure a healthy future, well-being, and quality of life for adolescents.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FINANCING

The authors received funding for the results of this article from the research project 'For a healthy smile' with code PT241IJ400-024, which is part of the Territorial Programme 'Quality of Life' of the Special Municipality of Isla de la Juventud.

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