



KNOWLEDGE OF THE DIAGNOSIS OF POTENTIALLY MALIGNANT DISORDERS IN THE ORAL CAVITY IN STOMATOLOGY STUDENTS

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SUMMARY

The increase in the incidence of oral cancer is a global health problem and will be more, so greater dissemination is necessary for the prevention and promotion of health and to emphasize stomatologists in the mouth. Head and neck cancer corresponds to 3% of cancer in general, the sixth most common type in the world. The objective is to identify the knowledge of dental students about the diagnosis of potentially malignant disorders in the oral cavity. It is a cross-sectional, observational, quantitative, prospective and projective study, a questionnaire was applied a total of 146 Stomatology students. Regarding the institution in which they study, 83 (56.8%) study at the Meritorious Autonomous University of Puebla and 63 (43.2%) at a private university. Randomly selected students enrolled in the fall/spring 2021/2022 period from different semesters who have taken courses on oral cancer. An Excel database was created to analyze, process and identify if there are deficiencies in the topic of etiology and diagnosis to be followed. Having as results that, of the total of 146 dentistry students, of which 89.7% indicate that they have not participated in the clinical detection of oral cancer, that the results of the evaluation of the students of private and public universities are similar, (61.4% and 61.8%). Regarding gender, type and location of most frequent cancer of Oral Cancer and potentially malignant disorders range from 31% to 49%, (regular to bad) so it is important to deal with these risk factors to make more accurate diagnoses. Considering the recommendations of the World Health Organization, which indicates that the social construction of health is born from the knowledge future graduates in stomatology have and by identifying in 2020 worldwide 476,125 people were diagnosed with oral and oropharyngeal CA, it is urgent to reinforce this knowledge.

KEYWORDS: Oral cancer, Potentially malignant disorders.

INTRODUCTION

Oral health is an integral and essential part of the general health of people. For the 21st century, various policies and strategies are presented to improve oral health as part of human rights. Petersen mentions that there are prevalent conditions such as caries, gingivitis, periodontal disease, loss of dental organs, dental trauma, dental fluorosis, dental erosions and oral cancer (AC).^[1]

There are more than 100 different types of AC, these take the name of the organ or cells where they start. AC is currently one of the most common causes of morbidity and mortality. It is estimated that about 43% of CA deaths are due to tobacco use, unhealthy diet, alcohol consumption, low activity and infections. The groups with less possibilities and low income are the most exposed to risk factors such as carcinogens, tobacco use, infectious agents and alcohol consumption, which can be avoided to reduce the incidence of CA.^[2]

According to García, Bonet, Artiles and Díez, they point out that CA is a worldwide health problem and one of the most important causes of mortality (50% mortality).^[3,4,5]

AC is a generic term used to designate a wide group of diseases that can affect any part of the body; there is also talk of malignant tumors or malignant neoplasms. A defining characteristic of AC is the rapid multiplication of abnormal cells that extend beyond their usual limits.^[6]

Consider that the difference between a normal cell and a neoplastic cell is mitogenic stimulation, that is, normal cell proliferation depends on external growth factors from its surroundings, while neoplastic cells have a reduced dependence due to the activities of oncogenes that generate their own stimulation. That some of the tumor cells share some physiological changes, called acquired capacities, sufficient to explain the malignant behavior that characterizes cancer cells, since they include abilities such as generating their own mitotic

signals, avoiding apoptosis, and the ability to invade and metastasize.^[7]

According to Santana Garay, he indicates that there are more than 100 different diseases with more than 1,000 histopathological varieties that, as a common characteristic, present an abnormal and uncontrolled proliferation of cells that invade nearby and distant tissues and organs and that, if not treated in time, cause the death of the individuals in whose body they develop. Neoplasms can be benign, if they are localized and do not invade adjacent tissues or spread throughout the rest of the body, or malignant, if they invade, destroy tissues and are capable of spreading.^[8]

Oral CA ranks sixth in incidence of CA in the world. In 2020 almost 10 million deaths were attributed to this disease, Araya alludes that it corresponds to one of every six registered people, for this reason it is necessary to give the importance that a lack of knowledge for the timely diagnosis of this disease by stomatologists would contribute to the delay by not being diagnosed and starting timely treatment of patients who present any symptoms. In this way, the need for basic knowledge to identify and diagnose this type of disease in time is highlighted, since early diagnosis and treatment prevents higher mortality.^[9]

Head and neck CA is the 6th most frequent human CA. 3% of all cancers are located in the oral cavity. However, there is geographic variability with a higher prevalence in South America, Southeast Asia and especially in India, where oral cancer represents 40% of all malignant tumors. Each year more than 575,000 new cases of oral AC are diagnosed worldwide. The incidence in Spain is 5.7-12.9 cases per 100,000 men/year and 0.6-2.1 cases per 100,000 women/year, although these figures are being equalized with the adoption by women of harmful habits or habits of risk or exposure to the sun as part of some professions similar to those of men. Brazil has one of the highest incidences in Latin America in oral AC, it occupies the third place of frequency in men with 8.5% with respect to other locations and in women it is 2.3%. Warnakulasuriya mentions that oral AC is a multifactorial disease, in which tobacco and alcohol play a very important role, but it can be prevented by avoiding the pertinent risk factors, as well as going to the dentist for annual check-ups.^[10]

The development of malignant tumoral lesions in the oral complex produces a functional, aesthetic and psychological affectation since once the patients are in advanced stages, when they are treated, morphological and functional affectations are produced, many times irreparable.^[2]

According to the WORLD HEALTH ORGANIZATION, they indicate that, although oral AC has a low percentage of occurrence compared to other types, it does not diminish its importance as a health problem and

especially within the dental/stomatological field, given its high morbidity and mortality.^[11]

In terms of age, it is more common in patients 50 years of age and older. Although 90% of oral CAs are diagnosed in people over 40 years of age, and more than 50% in individuals over 65 years of age, an increase in the incidence of this disease has recently been observed in those under 40 years of age, which could be associated with human papillomavirus infection. The main locations of AC are tongue and floor of the mouth in Europe and North America, in India it is located in the buccal mucosa. In reference to histology, 90% of oral carcinomas are of the oral squamous cell carcinoma type.

Survival at 5 years is 40-56%, although it varies depending on the type of cancer:

- 70% Lip cancer
- 30% Other oral locations.

It is estimated that about 43% of cancer deaths are caused by tobacco use, unhealthy diet, alcohol use, inactivity, and infections. The groups with fewer possibilities and low income are the most exposed to risk factors that can be avoided.^[2]

In the year 2000, the World Health Organization reported more than eight million people dying from AC, of these, 390,000 cases located in the head and neck, (4.8%) In Mexico in the same year, Mosqueda, reports a frequency of oral cancer 5% and squamous cell carcinoma as the most frequent tumor, followed by lymphoma, malignant salivary gland tumors and basal cell carcinoma. An important symptom associated with oral cancer is pain during tumor progression.^[12]

Connelly refers that, in patients with AC of the head and neck, pain is present in up to 85% at the time of diagnosis, while Peña indicates that, of 79 cases of AC, (57%) of the patients their symptom.^[13,14]

Of the anatomical sites affected, in order of frequency are: Tongue, Major salivary glands, Palate, Floor of the mouth, gums and lip.^[15]

Predisposing factors

Among the epidemiological factors for Latin America are considered age, sex, race, smoking and alcohol consumption, the latter being the most important risk factor for the development of this neoplasm, as well as recurrences after treatment.^[16]

Neville mentions that smoking increases the risk from 5 to 9 times, which increases 17 times when smoking 80 cigarettes per day. In Mexico, 12.3% of men smoke and 6% of adolescent women between 10 and 19 years old; 31% of men and 9.9% of women over 20 years of age. Accounting, Guerrero indicates that 10.9 million smokers over 15 years of age (8.1 men and 2.8 women), which corresponds to 16% of the population, are

smokers, which may increase the risk of acquiring AC among this population.^[17,18]

Regarding alcoholism; tramacere indicates that those who consume alcohol have a 2 to 3 times greater risk of developing oral AC than the general population. Guerrero mentions that Mexico ranks 11th in the world for the way of drinking, the National Health and Nutrition Survey (2012) showed that 28.8% of men and 21.2% of women drink alcohol between the ages of 12 and 17 and 67.8% men and 41.3% women aged between 18 and 65 years and beer is what they consume the most.^[18,19]

Another of the predisposing factors mentioned by Anaya is the Human Papilloma Virus (HPV), it is an epitheliotropic virus with more than 100 subtypes, it infects mucous membranes, it is transmitted through amniotic fluid and transplacentally, blood, autoinoculation and sexual contact, it is present in 6 % in children, 13% in adolescents and 23% in adults. Anaya found HPV-16 in 14 cases out of 21 and a prevalence of 66.6%. In addition, with sexual diversity, homosexual behavior and the practice of orogenital intercourse, the presence of HPV increases. The National Cancer Institute reported a prevalence of HPV in the Mexican population of 42%; 71.4% in men and 28.6% in women.^[20]

In Carrillo Rivera it is mentioned that the practice of orogenital intercourse has an estimated relative risk (RR) of 3.4. Having a greater number of sexual partners has a RR of 3.1 of presenting HPV associated with oral CA. Homosexual behavior in Mexico City was estimated at 3.4% among adolescents and young adults. Carrillo mentions that HPV in the Mexican population occupies a special place in the pathogenesis of oral squamous cell carcinoma, since the prevalence in men and women is 43 and 17.5%, respectively.

It also mentions that there are other predictive factors found in oral squamous cell carcinoma of the tongue, such as infiltration of neoplastic cells into muscle.^[16]

Diagnosis

90% of primary malignant tumors are oral squamous cell carcinomas, being more frequent in the lateral border of the tongue.^[7]

As described above, it is necessary that the stomatologist /dentist is prepared to make a good timely diagnosis as a preventive measure so that the risk is lower. Take into consideration the performance of an extra and intra oral examination that follows a certain order, so it is recommended to consider the steps described by Mateo-Sidrón Antón, MC, & Somacarrera Pérez, ML. (2015).^[7]

Markers of cellular senescence in oral cancer and precancer

Molecular markers have been observed with progressively increased expression as oral carcinogenesis progresses, (example. p53 protein) but without finding a marker that appears exclusively in a cancerous lesion but not in the malignant lesion.

When a cell loses its senescent response, it goes from a benign state (pre-malignant lesion) to a malignant stage (carcinoma). although the complexity of the carcinogenic process does not seem to indicate that this occurs as a cause-effect process but rather as another expression of carcinogenesis. Campo Trapero indicates that Kang and Park established an in vitro model of oral carcinogenesis to describe the molecular mechanisms by which environmental factors facilitate the appearance of oral cancer. It has been observed experimentally that the expression of the mutated p53 protein appears elevated in dysplastic epithelial tissues indicating an early event in oral carcinogenesis. At the level of oral AC, there is currently no reliable diagnostic or prognostic marker of leukoplakic lesions.^[21]

Regarding treatment, it is important to know the stage of the disease in order to plan the best treatment. In Mexico, immunotherapy models have been developed that induce lymphocyte recruitment and infiltration into the tumor, causing its fragmentation and reduction.^[22]

When a patient presents with oral carcinoma, survival in the early stages is 80% while in the advanced stages it is 35%. For the treatment of this type of CA, an attempt should be made to preserve the maximum healthy structure possible.

Radiotherapy plays a very important role in the treatment of CA of the head and neck. Normally, radiation doses in a patient with head and neck AC reach up to 50-70 Gy, over a period of 5 to 7 weeks, once a day, 5 days a week.^[7]

Frequent manifestations in the oral cavity

Mateo-Sidrón Antón, MC, & Somacarrera Pérez, ML. (2015).^[7] indicates that oral squamous cell carcinoma is the most common malignant tumor (90%) that can be found in the oral cavity. This usually presents clinically as a white lesion (leukoplakia), red lesion (erythroplakia), or a mixture of red and white lesions, which over time can lead to ulceration of the mucosal surface. Its evolution can be exophytic or endophytic type growth characterized by an ulcerated surface. The most common location for this type of tumor is the lateral edge and ventral surface of the tongue, followed by the floor of the mouth.

METHODOLOGY

This research was born after reading what the WHO indicates in the II Regional Forum of the Americas starting from knowing what is the level of knowledge

about oral AC with which the dentist/stomatologist concludes the degree and the knowledge with which he will face during professional practice, regarding the detection of oral AC. The objective is to identify the knowledge of dental students about the diagnosis of potentially malignant disorders in the oral cavity.

It is a cross-sectional, observational, quantitative, prospective and prolective study, a questionnaire was elaborated in forms. office, with 35 closed questions; The guidelines to follow were to send the link to students of both sexes who would like to answer the questionnaire, who are enrolled in the degree in dentistry at a university (public or private) located in Puebla Mexico, fall/spring period 2021/2022, who have completed the subjects that include content on oral CA regardless of the semester. The content of the questions is a guide to identify the knowledge of future graduates in stomatology, which will allow them to expand and reinforce their weaknesses in order to make a timely

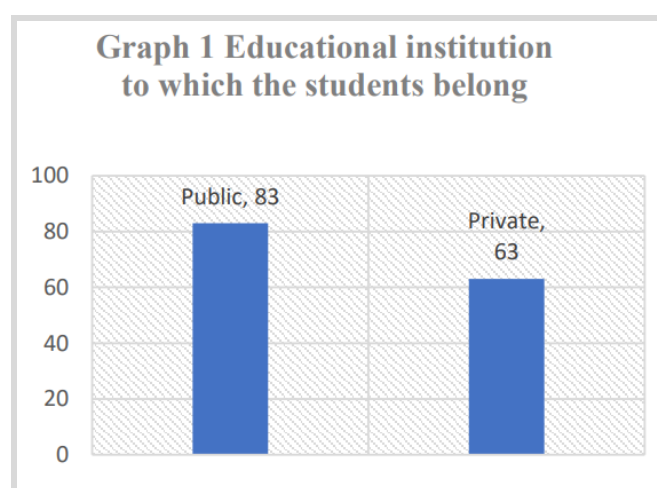
diagnosis at the level of the oral cavity of the patients who attend the consultation.

The statistical results were emptied into a data collection sheet, designed for this research. In addition, an Excel database was created to analyze, process and identify whether or not there are deficiencies in the subject regarding etiology, diagnosis and oral manifestations.

RESULTS

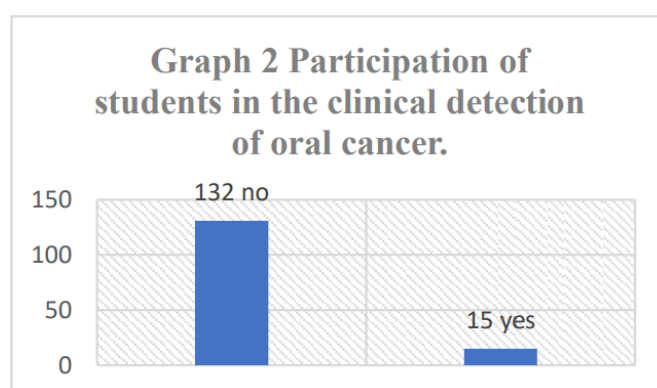
To analyze the knowledge that stomatology students have about the diagnosis of potentially malignant disorders at the level of the oral cavity, the following results were found:

A total of 146 Stomatology students were surveyed, of which 101 (69.2%) are female and 45 (30.8%) are male. Regarding the institution in which they study in the public university, 83 (56.8%) and 63 (43.2%) in private universities, as shown in Graph 1.



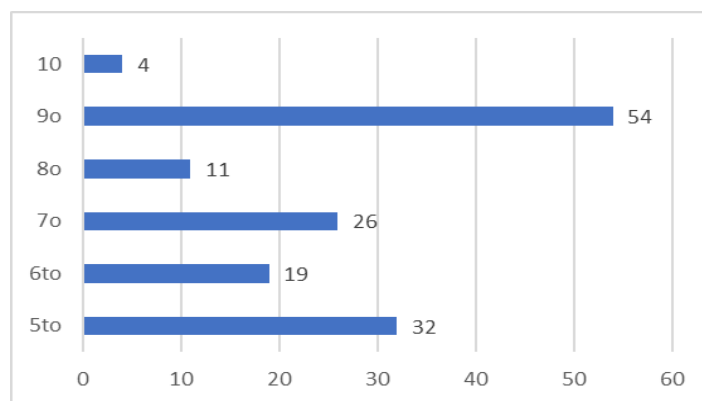
Graph 2. The selected population corresponded to students who were already studying some clinical subject and who could make a diagnosis in patients at some point. Therefore, for the study we worked with a total of

146 respondents, of whom 132 (89.7%) mentioned not having participated in the clinical detection of oral cancer, while 15 (10.3%) had participated.



Graph 3. The students who comply with taking a clinical subject are those who are studying from 5th to 10th semester, finding the following participation, from

the 5th semester there are 32 subjects, from 6th are 19th, 7th are 26th, 8th are 11th, 9th are 54th and 10th are 4th.



Graph 3: Semester taken by university students.

Chart 1.

In a general aspect, to measure knowledge, the evaluation of all the questions applied gives us a result of 56, which is considered regular and serves to measure the knowledge parameters. This table considers values

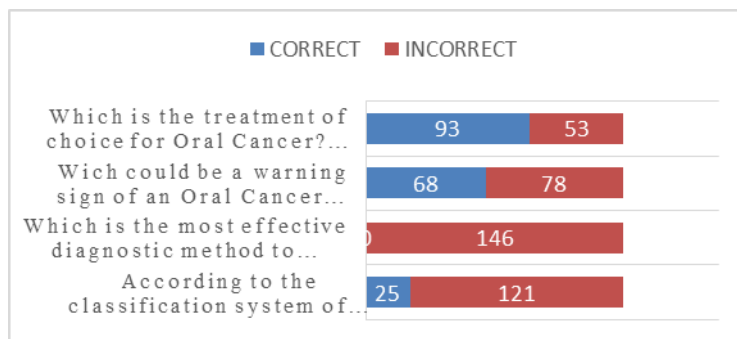
from 0 to 19 as very bad knowledge, from 20 to 39 bad, the values from 40 to 59 regular knowledge, from 60 to 79 good and those that are in the range of 80 and 100 as excellent knowledge (Chart 1).

100-80	79-60	59-40	39-20	19-0
Excellent	Good	Regulate	Bad	Very Bad

Chart 1. Parameters to measure the knowledge of university students

To evaluate the general knowledge of oral cancer that the students have, a total of 11 questions were evaluated in which a score of 61.5 points was obtained, which shows a knowledge at the lowest in its lower good parameter in

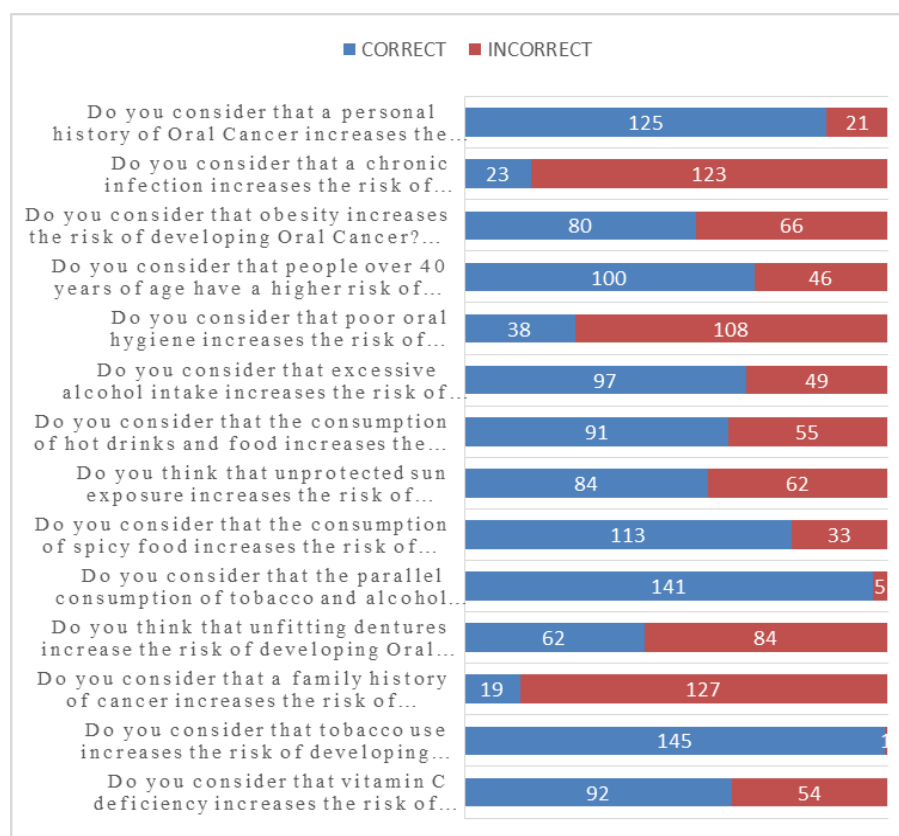
this area, observing that. The areas of opportunity to support knowledge are the most frequent location of AC, the most frequent types of AC, evolution, warning signs and symptoms (Graph 4).



It was also detected that the results of the evaluation of the students of private and public universities are similar, with a score of 61.4% and 61.8% respectively, maintaining good knowledge in both universities with a low level.

It is also observed that the 81% of the participants consider that the size of the lesion is important in patient survival, as well as 96% identify that cancerous lesions are not always painful. Regarding gender, type and location of the most frequent cancer, oral cancer and potentially malignant disorders range from 31% to 49%, so it is important to deal with these risk factors to make more accurate diagnoses. (Graph 4)

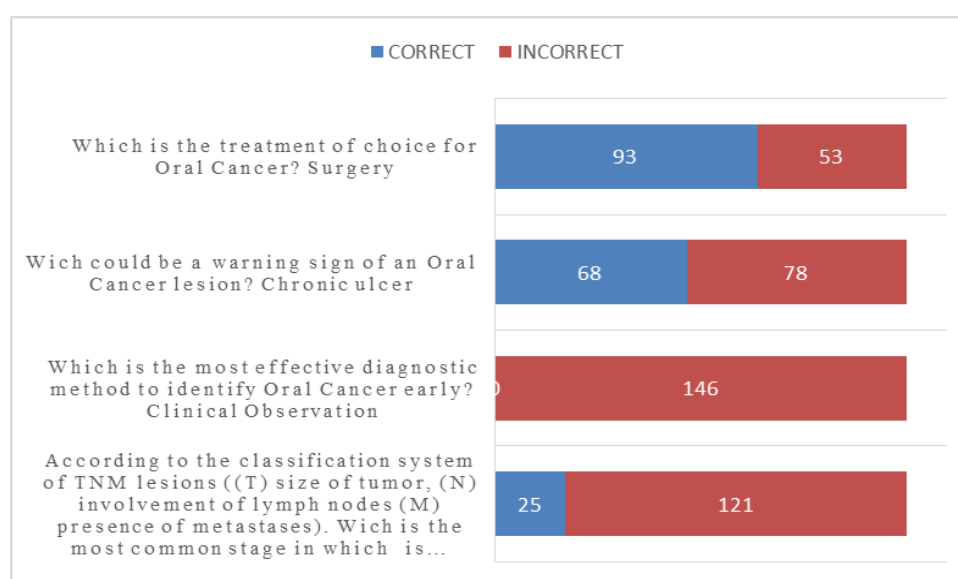
To assess knowledge of causes and risk factors, 14 questions were evaluated in which the score in this aspect was 46.7%, which indicates regular knowledge at its lowest levels, observing that private university students have a higher level, reaching a score of 49.9%, which represents 5.7 points above the public university students. However, the opportunity areas that are presented in both universities are: the need to identify hereditary-family factors, risk factors such as ill-fitting prostheses, poor hygiene, and chronic infections. (Graph 5)



Graph 5: Knowledge of risk factors for cancer.

Among these 14 questions, risk factors are also considered and correspond to 97% identify that tobacco and alcohol consumption increase the risk of developing oral cancer. The 77% identifies the personal background as a risk factor and that the consumption of spicy foods is not a predisposing factor. On the other hand, it is observed that risk factors such as ill-fitting dentures, poor hygiene and chronic infections are overlooked, as shown in Graph 5.

Finally, regarding the knowledge of causes and risk factors, 4 questions were evaluated where the score for this aspect was of 12.2 points, which indicates a very poor knowledge regarding diagnosis. Regarding the students at the public university, they obtained a score of 13.3 and the private university students a score of 10.8, the knowledge is higher in the public university students. However, for both schools, the opportunity areas are the methods for the effective diagnosis of oral cancer and the identification of warning signs, as shown in Graph 6.



Graph 6: Knowledge regarding diagnosis.

Considering the knowledge of the diagnosis, clinical observation is not considered the most important way to identify early alterations of cancer, likewise it is identified that according to the TNM lesion classification system ((T) tumor size, (N) lymph node involvement,

(M) presence of metastasis) it is identified that in 86% of cases are diagnosis stages III and IV, which makes timely treatment of cancerous lesions impossible. (Chart 1)

Chart 1. Percentage of responses to questions on knowledge of cancer Diagnosis and Treatment.		
Question	Correct	Incorrect
According to the TNM lesion classification system: (T) tumor size, (N) lymph node involvement (M) presence of metastasis. Which is the most common stage of Oral Cancer in which is diagnosed? III and IV	17%	83%
Which is the most effective diagnostic method to early identification of Oral Cancer? clinical observation	0%	100%
Which could be a warning sign of an Oral Cancer lesion? Chronic ulcer	47%	53%

CONCLUSIONS AND DISCUSSION

Health promotion constitutes the starting point for the development of healthy lifestyles and a health culture, in addition, clinical and public health research has shown that a series of individual, professional and community preventive measures are effective in preventing most oral diseases, so we agree with Quintanilla Dominguez, C^[23] (2019) in designing an educational program on oral cancer for adolescents. Nowadays, oral health sciences have advanced, although poor and disadvantaged populations around the world have not benefited. The main challenges for the future will first be to translate outstanding knowledge about the clinical manifestations of Oral Cancer and its preventive measures, which entails applying appropriate treatments and rehabilitating patients. On the other hand, disseminate knowledge in the prevention of oral diseases, avoiding risk factors and increasing protective factors in communities of any social status, agreeing with the Nacional Cancer Institute^[24], to the communities emphasizing education, health promotion, and detection in its early stages, the recommendations of the World Health Organization indicate that the social construction of health, is born and arises from the knowledge that students and future graduates of stomatology have on the subject in oral cancer, so this research gives us tools to justify the need being the case to strengthen the subject, develop academic and dissemination strategies that help us improve the level of knowledge on the subject and provide comprehensive care to patients with a preventive, educational and timely diagnostic approach.

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