

## Prevalence of dental calculus in a young adult population in a suburban community of the city of San Francisco de Campeche 2021

## Prevalencia de cálculo dental en población adulta joven de una comunidad suburbana de la ciudad de San Francisco de Campeche 2021

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### Abstract

Good oral health goes hand in hand with good dental hygiene, this guarantees well-being in people. Unfortunately, people do not have good dental hygiene due to various factors, one of them is personal economy. According to the study carried out by the Key-Stone Consultant under the title, "Patients in the dental sector", 21% of patients admit not going to a dental clinic, despite having some oral problem present, due to economic difficulties, lack of time, lack of importance given. This generates an accumulation of microorganisms in the oral cavity generating a bacterial plaque giving rise to dental calculus or dental tartar and this causes endless oral problems such as lack of dental aesthetics. This research work studies dental calculus as well as the relationship of associated factors for this condition to be generated. This is achieved from the exhaustive review of scientific articles concerning the oral health problem, analyzing the prevalence of dental calculus in young -adults in the suburban neighborhood of the city of San Francisco de Campeche during the year 2021 is the main objective. In interviews conducted with young patients, the analysis showed that of 20 people who were interviewed, 14 brush only twice a day and therefore there is a visualization of the presence of dental calculus presenting other diseases. 50% of people have economic problems which limit their ability to go to the dentist. The lack of time to do an adequate dental cleaning is also a factor that was presented in the suburban area since 70% admitted to having a lack of time. Concerning visits to the dentist, the analysis resulted in 8 people never going to the dentist and only one person going 3 times for braces. In this project, dental calculus is a factor that causes multiple problems in the oral cavity that are associated with the lack of good responsible habits with the mouth. The same dental calculus causes the loss of teeth. It is extremely relevant to promote dental education in young people as in adults with the purpose of raising awareness and changing the attitude of the most vulnerable population of these suburban areas of the city of Campeche. The implementation of oral health programs is necessary in order to improve them.

Dental prosthesis, Oral health, Aesthetics

### Resumen

Una buena salud bucal va de la mano con una buena higiene dental, esto garantiza bienestar en las personas. Desgraciadamente, las personas no tienen una buena higiene dental debido a diversos factores, uno de ellos es la economía personal. Según el estudio realizado por la Consultora Key-Stone bajo el título, "Pacientes en el sector dental", el 21% de los pacientes reconoce no acudir a una clínica dental, a pesar de tener algún problema bucodental presente, debido a dificultades económicas, falta de tiempo, falta de importancia que se le da. Esto genera una acumulación de microorganismos en la cavidad bucal generando una placa bacteriana dando lugar al cálculo dental o sarro dental y esto provoca un sin fin de problemas bucales como la falta de estética dental. En este trabajo de investigación se estudia el cálculo dental así como la relación de factores asociados para que se genere esta afección. Esto se logra a partir de la revisión exhaustiva de artículos científicos referentes al problema de salud bucal, analizando la prevalencia de cálculo dental en jóvenes -adultos de la colonia suburbana de la ciudad de San Francisco de Campeche durante el año 2021 es el objetivo principal. En entrevistas realizadas a pacientes jóvenes, el análisis arrojó que de 20 personas que fueron entrevistadas, 14 se cepillan sólo dos veces al día y por lo tanto se visualiza la presencia de cálculo dental presentando otras enfermedades. El 50% de las personas tienen problemas económicos que limitan su capacidad para ir al dentista. La falta de tiempo para hacer una limpieza dental adecuada también es un factor que se presentó en el área suburbana ya que el 70% admitió tener falta de tiempo. En cuanto a las visitas al dentista, el análisis dio como resultado que 8 personas nunca van al dentista y sólo una persona va 3 veces por aparatos dentales. En este proyecto, el cálculo dental es un factor que causa múltiples problemas en la cavidad bucal que están asociados a la falta de buenos hábitos responsables con la boca. El mismo cálculo dental causa la pérdida de dientes. Es de suma relevancia promover la educación dental tanto en jóvenes como en adultos con el propósito de concientizar y cambiar la actitud de la población más vulnerable de estas zonas suburbanas de la ciudad de Campeche. Es necesaria la implementación de programas de salud bucal para mejorarlos.

Prótesis dental, Salud oral, Estética

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## Introduction

The oral cavity is exposed to thousands of bacteria due to the constant microorganisms that enter the oral cavity derived from the food we consume, drinks and the simple fact of being an open cavity from the outside, also due to various factors such as the pH of saliva, mouth temperature, anatomical characteristics, immunological factors and dental hygiene.

A good oral health goes hand in hand with a good dental hygiene which guarantees well being in people, unfortunately people do not have a good dental hygiene due to several factors one of them is the economy according to the study carried out by Key-Stone Consulting under the title, patients in the dental sector, 21% of the patients recognize that they do not go to a dental clinic, This generates an accumulation of microorganisms in the oral cavity generating a bacterial plaque giving rise to dental calculus or dental tartar and this causes a myriad of oral problems.

In this community program we talk in detail about dental calculus and everything related to its generation, this was achieved from research in articles, in interviews with the people we focus on who are young adults, we talk from the age of 15 years to 40 years and the importance we should give to our oral cavity as it is of utmost importance to live a dignified life. It is necessary that the community gives relative interest at the time of brushing your teeth, since having a proper brushing with the use of dental floss that can be accompanied by a mouthwash achieves the goal of mouth care, visiting the dentist could detect oral pathologies in time to prevent, but unfortunately many people have the lack of habit by bad habits.

According to their analysis, people think that by not visiting the dentist they are saving money and avoiding discomfort, it is a risk factor that these bad attitudes continue in the long term and the consequences can be seen, such as dental loss and even problems such as oral instability, studies have shown that having dental problems, such as bad breath.

To be able to analyze the causes and current motives of the population of young people and adults in the suburban area of Campeche, the lack of hygiene gives rise to dental calculus, thus examining the factors that prevent not going to the dentist, the poorly performed techniques at the time of tooth brushing, factors such as bad habits in the living areas as well as the lack of education and the reasons why there should be more implementation in the area of education for dental health from schools, to prevent oral diseases.

## Approach to the problem

With the crisis, oral health has become one of the most neglected issues for the majority of public health care patients. In addition to the fear or laziness of having to go to the dentist, there is now a third factor in discord. The economic factor is driving more and more families away from our offices, says Luis Rasal, president of the Official College of Dentists of Aragon, who warns of the health risks involved in neglecting the teeth. Not going to the dentist continues to be a relevant aspect of general health conditions in the Americas. Its importance lies in the fact that it accounts for a large part of the global burden of oral morbidity, because of the costs related to its treatment and the possibility of applying effective preventive measures.

A school of dentists warns that solving a simple problem means savings in the long term, as there is no need to resort to more complicated operations to solve the condition, which is why the ideal is prevention to correct any signs, figures that are more than relevant and show that despite the fact that oral health is gaining social awareness among the population, which is increasingly going to the dentist on a regular basis as a preventive measure to avoid diseases and ailments, there are certain social brakes that prevent oral health care from being completely correct. According to data from a study on the reasons why people do not go to the dentist: According to the study carried out by Key-Stone Consulting under the title, "Patients in the dental sector", 21% of patients admit that they do not go to a dental clinic, in spite of having an oral problem, because of economic difficulties.

The data from the study also shows that 11% of Spaniards admitted that they do not go to the dentist due to lack of time in their daily lives. It is important to point out that the bacteria found in the mouth are very numerous. According to scientific studies, there are around 100 million bacteria per milliliter of saliva. In addition, there is not only one species of bacteria, since up to 600 different species of bacteria have been found in the mouth, and when dental plaque is not removed during brushing and flossing, it hardens over time and forms dental calculus, which together with bacterial plaque are the main etiological agents of periodontal disease.

Since tartar is rough and porous, it facilitates the retention of more plaque and can be located above the gum margin, covering the spaces between the teeth. It has a yellowish color, although it can acquire darker colorations due to tobacco and other pigments. It has a soft consistency. Among the symptoms that dental calculus can cause are: inflammation and bleeding of the gums, bad breath, recession of the gums, damage to the enamel, caries and even total loss of the tooth. Once the calculus is formed, it can be removed only by our dentist by ultrasound or scaling and root planing, depending on its location. In the case of bacterial plaque, oral hygiene instructions are provided to the patient to control its deposit, as well as to prevent its subsequent calcification into tartar.

- Tartar damages the supporting structure of the teeth.
- A good brushing technique, the use of dental floss and irrigator are key to prevent its formation.
- It cannot be eliminated by tooth brushing, so only professional hygiene can do it Prophylaxis at the dentist.

We should not wait until we have pain to go to the dentist's office, since, probably, if we have pain it means that we already have a problem that requires treatment. If we go for regular check-ups and we apply prophylaxis techniques, we will certainly avoid many of the dental and gingival problems that we could develop throughout our lives.

Prophylaxis is a treatment that does not require anesthesia unless the patient has dental hypersensitivity. Ultrasonic appliances are usually used to remove the calculus; these instruments, being refrigerated, can be uncomfortable in the case of sensitive teeth. After the mechanical removal of bacterial plaque and calculus, we will finish the gingival prophylaxis with the elimination of dental stains using a prophylaxis brush and dental polishing paste. The best way to enjoy a healthy smile and healthy teeth is to continue the good oral habits acquired during early childhood. A healthy smile is more than cosmetics.

Studies indicate that the health of your teeth and gums can indicate the state of your overall health. Poor dental hygiene has been associated with a high risk of some diseases in adults. Similarly, the mouth is a wonderful and privileged part of the human body, because through it the cry that announces the arrival of a human being to life emerges; it is a moment of great emotion and importance the act of feeding and love that constitutes breastfeeding where the oral cavity plays a fundamental role. It should be taken into account that during adolescence the permanent teeth fully erupt and, therefore, oral hygiene should be constant, since they are still immature and are more prone to dental caries; in addition, during this period the frequency of ingestion of sweets increases and tooth brushing during school hours decreases (Duarte Lisimón J. *Influencia de las técnicas educativas en el conocimiento sobre salud bucal* [work for the title of 1<sup>st</sup> Degree Specialist in Periodontology]. 2007, Santiago de Cuba). Characteristics of this stage, such as: rebelliousness, neglect of personal hygiene habits, rejection of parental authority, among others, cause concern among family members, teachers and health personnel. For the aforementioned reasons, it is important to raise awareness among adolescents to take care of their teeth and take extreme care of oral hygiene measures, as well as to systematize visits to the stomatologist every 6 months, even if their teeth remain healthy. Likewise, they should be guided to perform oral and facial examinations to prevent cancer and to teach the practice of self-examination of this cavity.

Both the adolescent and the mother will be questioned about habits, customs and knowledge related to oral health, specifically aimed at nutrition, hygiene and inadequate habits. Action should also be taken on the risks associated with negative lifestyles for the health of the members of this population group and their environment; prevent accidents and traumas involving the oral or facial region; control adequate supplies of fluoride supplements in accordance with the risks to which they are exposed; carry out plaque controls to ensure correct and effective toothbrushing, as well as taking into account the sequences of dental outbreaks. Regarding the timing of this analysis... 33% of Spaniards are considering not going to the dentist in the next few months due to economic reasons and the uncertainty caused by the coronavirus pandemic. This research reveals that 21% of the families declare serious economic problems: 10% of the families interviewed state that they have suffered a very negative impact due to the loss of employment of one or more of their members, together with 11% who confirm that they are living a difficult situation due to an ERTE or labor instability that will increase, could last in time or worsen later on. Another 16% have managed to resolve problems related to job uncertainty and temporary lay-offs, while only 63% of families remain unscathed by job security issues. People should always keep in mind that dental hygiene is key to maintaining a healthy and balanced bacterial flora in our mouth. Health education in dentistry would be of great help in preventing dental calculus: It is a continuous learning process that begins in childhood, continues throughout our lives and promotes the development of healthy practices.

Nowadays, it is considered a fundamental tool to achieve the strategies proposed by Health Promotion. Health education implies generating a change in behavior through messages that promote the control of behavioral risk factors through the application of various methodologies, theories and models appropriate to the reality or context in which we wish to apply them. In the Faculty of Dentistry of the Universidad Nacional Mayor de San Marcos: - Gutiérrez et al. conducted a quasi-experimental-comparative study in 2020 to test the effectiveness of two types of didactic methods, one traditional (expository by an expert) and the other innovative (playful: Dentoplay rules game) on the attitudes of young people aged 15-18

years for the preservation of their oral health. The study was carried out in a National High School Educational Institution in the district of San Martín de Porres. The population consisted of 70 young people who were divided into two groups Health Education in Dentistry. 239 (A and B) of 35 children each. Group A was assigned the expository didactic method by an expert using a giant model of the upper and lower jaws and a flip chart, while group B was assigned the Dentoplay didactic method. An evaluation form was applied to the youngsters at the beginning and end of the intervention to monitor learning. In both groups the topics were developed equally and the attitude of the youngsters towards their oral health was measured based on the following elements: cognitive (knowledge and beliefs), affective (feelings and preferences), volitional (manifest actions: participation, attention and concentration) and oral hygiene control.

With regard to oral hygiene, it was observed that the percentage of young people with poor hygiene (at the beginning of the study) in both group A and group B decreased significantly after the application of the methods indicated, with the difference being greater in the group of young people who used the play method. Furthermore, only in group B, at the end of the study was there a percentage of young people with good oral hygiene (8.82%). On the other hand, both in group A and group B the cognitive variables comparing before and after were from fair to good and the affective variables in group A were from not favorable to not very favorable, while in group B they were from moderately favorable and favorable to very favorable. Finally, both methods allowed increasing the degree of knowledge in the young people, but their feelings and preferences towards oral health (affective component) were inclined towards the playful method.

### Justification

This research project aims to improve dental health in young people and adults in order to implement a better quality of life. The mouth represents an important part of multiple oral functions. The population segment to which this study is directed is with the purpose of raising awareness and preserving oral health.

The presence of dentobacterial plaque is part of an accumulation of bacteria present in the mouth, currently the suburban community of young adults do not know the proper dental hygiene measures since this population has not been studied, lacks oral health programs that assess the presence of dental calculus, the purpose is to raise awareness and implement previous health measures to this suburban population of young adults with oral hygiene campaigns.

### Theoretical framework

Oral health has become with the crisis one of the most neglected in most of the patients of the public health system. In addition to the fear or laziness of having to go to the dentist, there is now a third discordant factor. "The economic factor is driving more and more families away from our offices," says Luis Rasal, president of the Illustrious Official College of Dentists of Aragon, who warns of the health risks involved in neglecting the teeth. Not going to the dentist continues to be a relevant aspect of general health conditions in the Americas. Its importance lies in the fact that it accounts for a large part of the global burden of oral morbidity, because of the costs related to its treatment and the possibility of applying effective preventive measures.

The College of Dentists warns that solving a simple problem means savings in the long term, since it is not necessary to resort to more complicated "operations" to solve the condition, so the ideal is prevention to correct any signs. These figures are more than relevant and show that, despite the fact that oral health is gaining social awareness among the population, which is increasingly going to the dentist on a regular basis as a preventive measure to avoid diseases and ailments, there are certain social brakes that prevent oral health care from being completely correct. According to data from a study on the reasons why people do not go to the dentist: According to the study carried out by Key-Stone Consulting under the title, "Patients in the dental sector", 21% of patients admit that they do not go to a dental clinic, in spite of having an oral problem, because of economic difficulties.

The data from the study also shows that 11% of Spaniards admitted that they do not go to the dentist due to lack of time in their daily lives. It is important to point out that the bacteria found in the mouth are very numerous. According to scientific studies, there are around 100 million bacteria per milliliter of saliva. In addition, there is not only one species of bacteria, since up to 600 different species of bacteria have been found in the mouth, and when dental plaque is not removed during brushing and flossing, it hardens over time and forms dental calculus, which together with bacterial plaque are the main etiological agents of periodontal disease. Tartar, being rough and porous, facilitates the retention of more plaque and can be located above the gum margin, covering the spaces between the teeth, it has a yellowish color, although it can acquire darker colorations due to tobacco and other pigments. It has a soft consistency. Among the symptoms that dental calculus can cause are: inflammation and bleeding of the gums, bad breath, recession of the gums, damage to the enamel, caries and even total loss of the tooth.

Once the calculus is formed, it can only be removed by our dentist by means of ultrasound or scaling and root planing, depending on its location. In the case of bacterial plaque, oral hygiene instructions are provided to the patient to control its deposit, as well as to prevent its subsequent calcification into tartar. - Tartar damages the supporting structure of the teeth. - Good brushing technique, flossing and irrigation are key to prevent its formation. - It cannot be eliminated by tooth brushing, so only professional hygiene can do it Prophylaxis at the dentist... We should not wait until we have pain to go to the dentist's office, since, probably, if we have pain it means that we already have a problem that requires treatment. If we go for regular check-ups and we apply prophylaxis techniques, we will certainly avoid many of the dental and gingival problems that we could develop throughout our lives. Prophylaxis is a treatment that does not require anesthesia unless the patient has dental hypersensitivity. Ultrasonic appliances are usually used to remove the calculus; these instruments, being refrigerated, can be uncomfortable in the case of sensitive teeth. After the mechanical removal of bacterial plaque and calculus, we will finish the gingival prophylaxis with the elimination of dental stains using a prophylaxis brush and dental polishing paste.

The best way to enjoy a healthy smile and healthy teeth is to continue the good oral habits acquired during early childhood. A healthy smile is more than cosmetics. Studies indicate that the health of your teeth and gums can indicate the state of your overall health. Poor dental hygiene has been associated with a higher risk of some diseases in adults. Similarly, the mouth is a wonderful and privileged part of the human body, because through it springs the cry that announces the arrival of a human being to life; it is a moment of great emotion and importance the act of feeding and love that constitutes breastfeeding where the oral cavity plays a fundamental role.

It should be taken into account that during adolescence the permanent teeth erupt completely and, therefore, oral hygiene should be constant, since they are still immature and are more prone to dental caries; in addition, during this period the frequency of ingestion of sweets increases and toothbrushing during school hours decreases. Duarte Lisimón J. *Influencia de las técnicas educativas en el conocimiento sobre salud bucal* [work to opt for the title of 1st Degree Specialist in Periodontology. 2007, Santiago de Cuba. Characteristics of this stage, such as: rebelliousness, neglect of personal hygiene habits, rejection of parental authority, among others, cause concern among family members, teachers and health personnel. For the aforementioned reasons, it is important to raise awareness among adolescents to take care of their teeth and take extreme care of oral hygiene measures, as well as to systematize visits to the stomatologist every 6 months, even if their teeth remain healthy. Likewise, they should be oriented to perform oral and facial examinations to prevent cancer, and teach the practice of self-examination of this cavity. Both the adolescent and the mother should be questioned about habits, customs and knowledge related to oral health, specifically directed towards nutrition, hygiene and inadequate habits. Action should also be taken on the risks associated with negative lifestyles for the health of the members of this population group and their environment; prevent accidents and traumas involving the oral or facial region; control adequate supplies of fluoride supplements in accordance with the risks to which they are exposed; perform plaque controls to ensure correct and effective toothbrushing, as well as taking into account the sequences of dental outbreaks. Regarding the timing of this analysis...

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The study was carried out in a National High School Educational Institution in the district of San Martín de Porres. The population was 70 young people who were divided into two groups Health Education in Dentistry. 239 A and B of 35 children each. Group A was assigned the expository didactic method by an expert using a giant model of the upper and lower jaws and a flip chart, while group B was assigned the Dentoplay didactic method. An evaluation form was applied to the youngsters at the beginning and end of the intervention to monitor learning.

In both groups the topics were developed equally and the attitude of the young people towards their oral health was measured based on the following elements: cognitive knowledge and beliefs, affective feelings and preferences, volitional manifest actions: participation, attention and concentration, and control of oral hygiene. With respect to oral hygiene, it was observed that the percentage of young people with poor hygiene at the beginning of the study in both group A and group B decreased significantly after the application of the methods indicated, with the difference being greater in the group of young people who used the play method. In addition, only in group B, at the end of the study, the percentage of young people with good oral hygiene was 8.82%. On the other hand, both in group A and group B the cognitive variables comparing before and after were from fair to good and the affective variables in group A were from not favorable to not very favorable, while in group B they were from moderately favorable and favorable to very favorable. Finally, both methods allowed increasing the degree of knowledge in the young people, but their feelings and preferences towards oral health affective component were inclined towards the ludic method. through a reduction in the total intake and frequency of consumption of sugars. Protection of the tooth surface can be achieved by ensuring adequate exposure to fluorides.

Likewise, actions can be taken to reduce the effect of biofilm through good oral hygiene. Studies reported worldwide on its prevalence, such as the World Health Organization in 2004, showed 60 to 90% in school children and almost 100% in adults, and the Dental Federation International in 2010, found 44%, affecting almost half of the population. Dental caries is a disease of high prevalence and severity in the populations of various countries. In industrialized countries it affects more than half of the population, and because it is a cumulative process, the severity of the damage increases with increasing age. From the perspective of causality, caries is a complex disease since it is caused by the interaction of different mechanisms. For its analysis, the action of several genes, environmental, cultural, social and local factors should be considered. Several authors mention that dental caries is a public health problem due to its high prevalence. Dental caries is a process that can evolve and cause tooth loss if it is not treated promptly.

In Mexico it has been documented that the prevalence of dental caries is between 70 and 85% in secondary dentition at the age of years. The onset of the carious process cannot be attributed to a single cause, since its development requires a confluence of factors that determine the carious lesion, that is, that the aggression of the dental enamel is of great magnitude, that the resistance of the enamel to acid dissolution is insufficient, and that the mechanisms of remineralization of the enamel do not take place.

When dental caries reaches the deep dental tissues it becomes an emergency in stomatological services, but only if we know how this condition starts and spreads can we cure and prevent it. It is in this direction that the greatest efforts should be directed towards the control of this most frequent disease. It is for these reasons that we were motivated to carry out this work. Dentists fill teeth by removing the decayed dental material with the use of a dental drill and replacing it with a material such as silver alloys, gold, porcelain or composite resin. The latter two materials most closely resemble the natural appearance of the tooth and may be preferred for front teeth. Many dentists consider silver and gold alloy amalgams to be stronger and tend to use them for the back teeth, although there is a tendency to use the highly resistant composite resin in the back teeth as well. Periodontal disease: Undoubtedly in the last decade there has been increasing evidence that periodontal disease is a worldwide public health problem that health systems should take care of and periodontal disease represents the main cause among adults. According to the type of tooth, the twenty-one molars are extracted mainly due to caries and the anterior teeth due to periodontal disease. Dental caries and periodontal disease in advanced stages cause pain and the individual, when he/she does not have sufficient resources, prefers to eliminate it by means of dental extraction, resisting to face a long and expensive conservative treatment, which many times is not available in public health services. Specific bacteria are the essential cause of periodontal diseases. Other important risk factors are smoking, unhealthy diet, genetic factors, stress or excessive alcohol consumption.

Periodontal diseases are also associated with certain systemic diseases such as diabetes, cardiovascular diseases, respiratory diseases and some complications during pregnancy. Periodontal disease is a bacterial disease that causes low intensity infection, with important metabolic consequences and local inflammatory reactions that destroy supporting and protective tissues of the tooth. Gingivitis Periodontal disease begins with gingivitis, a chronic inflammation of the gums, which is very common and reversible for most patients. It can progress to periodontitis, a more serious situation in which there is destruction of the supporting bone. In 15% of the population the disease can progress to severe periodontitis which can lead to tooth loss. The most difficult part is to identify the sites that are already evolving from gingivitis to periodontitis. We can find sites with depths of 4 mm but which still do not show radiographic evidence of bone loss and this is mainly due to the low sensitivity of radiography and probing error. It has been calculated that the probing error is approximately 1 mm and added to the degree of inflammation, we can easily go from 3 mm to 4 mm. This should be carefully analyzed by interpreting all periodontal clinical parameters. The extent of gingivitis can be classified as localized  $\leq 30\%$  of affected sites and generalized  $>30\%$  of affected sites. Likewise it can be marginal, papillary and diffuse. Periodontitis is the most common chronic inflammatory disease seen in humans. It is a major public health problem, causing tooth loss, disability, masticatory dysfunction and nutritional status. Deficient.

The manifestations of periodontitis, such as bleeding, halitosis, gingival recession and tooth loss, can have an impact beyond the individual sufferer. Periodontitis also compromises speech, reduces quality of life and is an increasing burden on the economy. Chronic Periodontitis Unlike gingivitis, periodontitis is inflammation of the gingiva and supporting periodontium, significantly affecting the gingival connective tissue, periodontal ligament, cementum, bone. As a pathognomonic result we observe inflammation, bleeding on probing, periodontal pocket formation, attachment loss and radiographic bone loss. Aggressive periodontitis Aggressive periodontitis usually occurs in subjects younger than 35 years, but it is suggested that it can occur at any age.

The rate of periodontal destruction is rapid and since it begins early in life, the destruction is seen in young subjects. But the analysis should not be based on age alone but on clinical findings, radiographic findings, family and personal history, laboratory aids. In the early stages of periodontal disease, most of the treatment consists of scaling and root planing, which means removing plaque and calculus in the pockets around the teeth and smoothing the root surfaces. In most cases of early periodontal disease, the above treatment and daily home care is all that is required for a satisfactory result. More advanced cases may require surgical treatment.

Early diagnosis of periodontal diseases is one of the main motivations for today's dental practice. With prevalence data being so contumacious, the prevention of gingivitis and periodontitis is one of the basic commitments of a dentist to the society in which he or she develops as a health professional. Dentobacterial plaque forms as a deposit on the surface of the tooth, and is made up of bacteria, their extracellular products and glycoproteins. ROSS, et al, 1984. Bacterial plaque corresponded to J. Leon Williams between 1852 and 1832, an American dentist, who worked in London, England, and who, in 1897, described a gelatinous accumulation of bacteria attached to the enamel surface in relation to dental caries. Carranza 1997. The researcher G.V. Black, a dentist and microbiologist between the years 1836-1915, discovered in some investigations that there were deposits of bacterial food on the surface of the teeth, proposing the term plaque, suggesting that the bacteria that inhabited it were mediators of forming a gelatinous substance that adhered to the surface of the teeth. The term plaque was first used in 1898 by G. V. Black to describe the microbial mass that coated carious lesions. Carranza1997; Liebana, 1997. At the end of the 21st century, Slots and Taubman published an article in 1992, in which they pointed out that this accumulation of bacteria associated with the dental surface could be easily removed by mouth rinses in its initial stages of development).



Currently, at the beginning of the XXI century, the World Health Organization has introduced a new concept known as Biofilm, this research has concluded that this is the biofilm that bathes the tooth surfaces that corresponds to a proliferating bacterial entity with enzymatic activity that adheres firmly with biochemical and metabolic activity that it possesses, has been proposed today as the main etiological agent in the development of dental caries. In 1987, a bibliographic study on bacterial plaque was carried out at the Evangelical University of El Salvador, whose primary objective was to present in a global manner the morphology of dental plaque and its evolution, as well as aspects of bacterial specificity and methods used for plaque control. Dental calculus. The period required is very variable, from days to weeks, usually beginning between the first and 14th day of plaque formation. However, there are reports of calcification in as little as 4 to 8 hours, because plaque in the process of calcification can mineralize 50% in 2 days and 60 to 90% in 12 days Carranza, 1991. It usually adheres strongly to the teeth and a new acquired film can form on its surface and so on. Their main problem is to be an obstacle to the effectiveness of oral hygiene since they are areas of mechanical retention for microorganisms and exit points for bacterial toxic products irritating to the oral soft tissues. Carranza 1997; Calcification involves the fixation of calcium ions with carbohydrate-protein complexes of the organic matrix and the precipitation of crystalline salts of calcium phosphates. Carranza, 1997.

### Background and terminology

Dentobacterial plaque forms as a deposit on the surface of the tooth, and is constituted by bacteria, their extracellular products and glycoproteins. ROSS, et al, 1984. Bacterial plaque corresponded to J. Leon Williams between 1852 and 1832, an American dentist who worked in London, England, and who, in 1897, described a gelatinous accumulation of bacteria attached to the enamel surface in relation to dental caries. Carranza, 1997. The researcher G.V. Black, a dentist and microbiologist between the years 1836-1915, discovered in some investigations that on the surface of the teeth there were deposits of bacterial food, proposing the term plaque, suggesting that the bacteria that inhabited it were mediators of forming a gelatinous substance that adhered to the surface of the teeth.

The term plaque was first used in 1898 by G. V. Black to describe the microbial mass that covered carious lesions (CARRANZA, 1997; LIÉBANA, 1997). At the end of the 21st century, Slots and Taubman published an article in 1992, in which they pointed out that this accumulation of bacteria associated with the dental surface could be easily removed by mouthwashes in its initial stages of development.

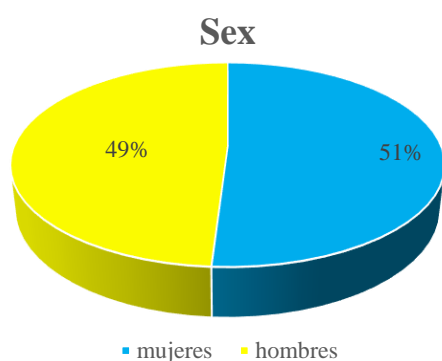
Currently, at the beginning of the XXI century, the World Health Organization has introduced a new concept known as Biofilm, this research has concluded that this is the biofilm that bathes the tooth surfaces that corresponds to a proliferating bacterial entity with enzymatic activity that adheres firmly with biochemical and metabolic activity that it possesses, has been proposed today as the main etiological agent in the development of dental caries. In 1987, a bibliographic study on bacterial plaque was carried out at the Evangelical University of El Salvador, whose primary objective was to present in a global manner the morphology of dental plaque and its evolution, as well as aspects of bacterial specificity and methods used for the control of dental plaque dental calculus. The period required is very variable, from days to weeks, usually beginning between the first and 14th day of plaque formation. However, there are reports of calcification in as little as 4 to 8 hours, because plaque in the process of calcification can mineralize 50% in 2 days and 60 to 90% in 12 days Carranza 1991; It tends to adhere strongly to the teeth and on its surface a new acquired film can form and so on. Their main problem is to be an obstacle to the effectiveness of oral hygiene since they are areas of mechanical retention for microorganisms and exit points for bacterial toxic products that irritate the oral soft tissues. Carranza 1997; Calcification comprises the fixation of calcium ions with carbohydrate-protein complexes of the organic matrix and the precipitation of crystalline salts of calcium phosphates. Carranza, 1997.

### Methodology

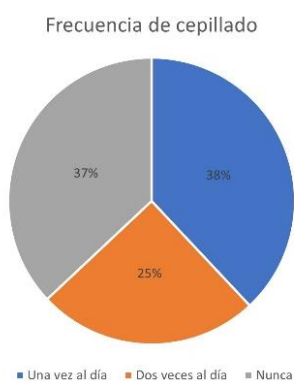
The study design is observational, descriptive and cross-sectional, carried out in a suburban population of the city of San Francisco de Campeche. The sample was obtained by means of the formula for finite sample size with a total of 100 subjects.

## Results

Of the study population of subjects  $n=100$ , 51% corresponded to male and 49% to female. The mean age was 30 years with a standard deviation of 11 and a range of 53. With respect to the variable times brushing, the majority 37% brushed once a day, 25% twice a day, never 38%. The distribution of the prevalence of dental calculus with respect to sex, reported high dental calculus in males with 28%, followed by moderate dental calculus in males with 30%, low dental calculus in males with 42%, high dental calculus but in females with 29%, moderate dental calculus also prevalent in females with 35%, and finally low dental calculus with 36% in females.



Graphic 1



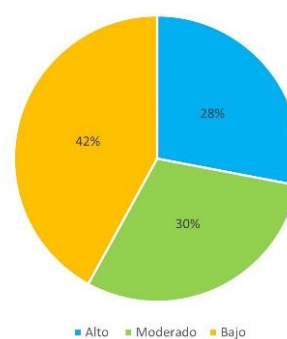
Graphic 2

## Conclusion

Dental calculus is a primary factor for the development of multiple problems in the oral cavity, the lack of attitude in good hygiene habits in the oral cavity propitiates the presence of dental calculus which represents a dental loss of great relevance in the young-adult population, the promotion of dental education in young people as well as adults is the purpose of prevention through the implementation of oral health programs.

The study carried out within the community demonstrates the high rate of lack of frequency of brushing that present dental calculus, in the information based on scientific articles where oral health has become with the crisis one of the great forgotten in most of the patients of the public health. In addition to the fear or laziness of having to go to the dentist, there is now a third discordant factor. The economic factor is driving more and more families away from our offices, says Luis Rasal, president of the Official College of Dentists of Aragon, who warns of the health risks involved in neglecting the teeth. Not going to the dentist continues to be a relevant aspect of general health conditions.

Prevalencia de cálculo en hombres



Graphic 3

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