International Journal of Sciences & Applied Research

www.ijsar.in

RELATIONSHIP OF DIETARY FACTORS AND HABITS OF BRUSHING TEETH TO DENTAL CARIES IN CHILDREN AGED 10 – 15 AT EBC SCHOOL OF LIURAI POSTO ADMINISTRATIVO AILEU VILA 2019

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ABSTRACT

Dental caries is a chronic, regressive process that begins with the dissolving of email minerals, as a result of a disturbed balance between the email and its surroundings caused by the formation of microbial acids from the substrate (food medium for bacteria) followed by the onset of the destruction of organic components that eventually occur cavitation or hole formation (Kennedy 2002).

To identify dietary factors and teeth brushing habits against cases of dental caries**.** This research can use The Cross-Sectional Study method of quantitative analytics using the Guttmann scale. The target population is all EBC Aileu Vila schoolchildren with a total of 90 people considered a sample of research because it covers the entire affordable population. The sampling technique using Non-Random Sampling is Purposive Sampling. **Results** showed that (a) The relationship of variable diet with dental caries cases with a Prevalence Ratio value of 0.727 95% Confidence Interval Lower 0.590 Upper 0.896, it was concluded that there is no relationship between Diet and Dental Caries. (b) The relationship between variable teeth brushing habits with dental caries with a Prevalence Ratio value of 4.9, 95% Confidence Interval Lower 2,250 Upper 10,916, it is concluded that there is a significant relationship between the habit of brushing teeth with dental caries in elementary school children or EBC Aileu Vila.

Keywords: Relationships, Diet, Teeth Brushing Habits, Dental Caries.

INTRODUCTION

Dental and oral health problems are an important concern in health development, one of which is caused by the vulnerability of the school-age group to dental health problems. School-age is a time to lay a solid foundation for the realization of quality human beings and health is an important factor that determines the quality of human resources.

Until now caries is a major problem in the oral cavity of children. The prevalence of caries in developing countries, including Timor Leste, tends to increase in the prevalence of the disease. Data shows that the population of Timor Leste has damaged teeth for various reasons. Dental and oral diseases that are mostly suffered by the people of Timor

Leste are those related to oral hygiene health problems. However, the most common is dental caries or cavities.

According to WHO (2003), 90% of school-age children worldwide and some adults experience caries. (Yohandri, 2012, in Tamrin, Afrida, Jamaluddin 2014). Research from European, American, and Asian countries including Indonesia, turns out that 80-95% of children aged under 18 years have caries. According to Permatasari and Dhona (2014), Dental caries is a progressive and accumulative infectious disease in the hard tissues of the teeth characterized by tissue damage starting from the tooth surface *(pits, fissures, and interproximal areas)* to extending towards the pulp. host microorganism food substrate and time. Dental caries is the most common dental disease that attacks humans. As many as 1,000,000 of the world's population suffer from dental caries. As many as 98% of the world's population suffers from caries.

According to Ecclas (1994), it is estimated that 90 % of school-age children around the world have experienced dental caries with the highest caries rate in Asia and America. The first definition explains more about the process and structure of dental caries. While the findings of the World Health Organization (WHO) in 2003 as well as research conducted in developed countries such as Europe, America, and Asia, 90-95% of children aged under 18 years experienced dental caries, meaning that only 5-10% of children were brought under 18 years of age. who do not have dental caries, meaning that dental caries are the biggest disease experienced by children in the world, including Timor Leste. Timor Leste is a new country, which is still experiencing many shortages of dental and oral health personnel, so it cannot provide optimal dental and oral health services to the community. It should be noted that the people of Timor Leste have very minimal knowledge of dental caries and cultural and cultural habits that greatly affect dental caries.

The Timor Leste Ministry of Health has determined that dental and oral health is an integral part of general health and to improve dental and oral health services to the community according to the needs of the people of Timor Leste.

According to the Dental and Oral Health survey in 2002, this was the first national dental and oral health survey conducted by the University of Adelaide Dental Epidemiology in collaboration with East Timorese dentists and dental nurses. Such surveys have produced few proposals for implementation to date, due to the lack of local support for these recommendations. In 2014 Lucio Babo Soares et al conducted a second survey in the capital city of Dili to replicate the dental and oral health survey conducted in 2002. The number of children invited to participate was from four age groups: 6-8, 9-11, 12-14, and 15-16 years. For the 2014 survey, the subdistricts of Dom Aleixo, Cristo Rei, Metinaro, and Vera Cruz were randomly selected for the survey. a Questionnaire was used to collect data on demographic behavior and oral health. The oral epidemiological examination was carried out by four dentists and five dental nurses.

Results the 2014 survey was conducted in Dili with a sample size of 758 and of that number, only 655 respondents were selected. In 2014, a lower proportion of children reported brushing their teeth the previous day (97% vs 100%, $p = 0.01$) and

a larger proportion reported having toothache (40% vs 19%, p < 0.001) (sometimes very often) during the previous 12 months. The average number of damaged, missing, or filled teeth in primary plus permanent teeth (dmft + DMFT) was greater in 2014 than in 2002 (4.2 vs 3.5, p = 0.01). There was no difference in the prevalence of decay in the primary teeth (39% vs. 37%, p = 0.61) or the mean number of damaged, missing, or filled teeth (DMF) in the primary teeth in 2014 compared to 2002 (2.0 vs 1.8, p = 0.47). However, the prevalence of permanent tooth decay was greater in 2014 (70% vs 53%, p < 0.001) as was the DMFT average (2.3 vs 1.7, p = 0.04). Prevalence of gingival bleeding (65%. Conclusion: There was an increase in the experience of dental caries among schoolchildren in Dili between 2002 and 2014, associated with a more permanent experience of dental caries. Keywords: children, Dili, DMFT, oral health, full article survey: vs. 81%, p < 0.001) and calculus (57% vs. 86%, p < 0.001) lower in 2014. The Timor Leste Ministry of Health has determined that oral health is an integral part of general health and improving services dental and oral health to the community following the needs of the people of Timor Leste. As explained above, nationally and internationally, the problem of dental and oral disease faced by the world community is dental caries, it is estimated that the main problem faced by the people of Timor Leste is the same as other communities in the world, namely dental caries.

In this case, the researcher wanted to see the relationship between dietary factors and brushing habits on dental caries in children aged 10-15 years at the Ensino Basico Central (EBC) school Suco Liurai Posto Administrativo Aileu Vila Municipio Aileu 2019. At the Ensino Basico Central (EBC) school.) children's eating patterns and eating habits changed due to progress and development in the municipality of Aileu. Food consumption among children in Aileu is now changing with the widespread sale of foods that cause dental caries in Aileu. Regarding the habit of brushing teeth was not in line with the pattern of food consumption in these children.

Cases of dental caries in children in the municipality of Aileu have also increased where children attending CHC Aileu Vila with dental caries can be seen in the following three consecutive years: 2015 dental caries 563, periodontitis 38, treatment 797, and a total of 1398. 2016 caries 580, periodontitis 68, treatment 383 and total visits 1368 2017 dental caries 610, periodontitis 101, treatment 760 and total visits 1471.

Dental and oral health is still not a major concern as a result, cavities or *caries* are a common problem faced by most people. Even though this condition is the gateway to various diseases. Ignoring dental and oral health means opening the gate to various diseases. So far, various dental problems are still limited to filling tooth holes. This action is considered capable of controlling caries. Even though it is not enough to completely solve the problem. The impact that occurs if from the beginning they have experienced caries, in addition to the function of the teeth as chewing, people will also experience disturbances in carrying out their daily activities so that people do not want to eat if this happens to children, children's intelligence will be disturbed and malnutrition occurs. , children are fewer students due to lack of concentration so it will affect intelligence.

Another consequence of tooth decay in children is the spread of toxins or bacteria in the mouth through the mouth blood flow, respiratory tract, digestive tract, especially if the child suffers from malnutrition, this will cause the child's immune system to decrease and the child will be susceptible to disease. If the primary teeth have cavities and are damaged, it can be predicted that the adult teeth will not be healthy later.

Based on the background of the problem described above, the author is interested in raising the issue of, Analysis of the Relationship between Dietary Patterns and Brushing Habits Against Dental Caries in Children aged 10 -15 years at Ebc School Suco Liurai Posto Administrativo Aileu Vila, municipality of Aileu.

1.2 **. Identification of problems**

According to data reported by CHC Aileu Vila, among others: In 2015 dental caries amounted to 1398, visits to ARI cases were 2,283 children under five, while cases were in the area of 1,105 children. In 2016 the number of cases of dental caries was reported to be 931, ISPA 2,013, and in the area of 2,451 toddlers. In 2017, 1,049 cases of dental caries were reported, Ispa 955, in the area of 1872. Data for three consecutive years were reported with a total of 3,378 cases of dental caries. For this reason, the researcher wanted to examine dental caries to see the relationship between eating patterns and brushing habits on dental caries.

THEORETICAL BASIS

Dietary habit

According to *(Sri Karjati in Sulistyoningsih, 2012).* Diet is the sharing of information that provides an overview of the types and amounts of food consumed by one person every day and is a characteristic of a particular community group. According to Suhardjo (in *Sulistyoningsih,* 2012). Dietary habit is interpreted as a way for a person or group of people to choose food and consume it in reaction to physiological, psychological, cultural, and social influences.

According to (Depkes RI, 2009). Diet is a way or effort in setting quantity and the type of eating with intent such as maintaining health, nutritional status, preventing or helping cure the disease. According to Sulistyoningsih, (2011). Children's eating patterns are influenced by mass media and the environment (teachers, and peers). Children want to try the food advertised on television. The influence of peers is also greater because school-age children spend more time with their peers than with their families. Increased peer influence has an impact on behavior regarding food patterns and types their choice. Children suddenly ask for a new type of food or refuse their previous choice of food, as a result of recommendations from their peers. The teacher's influence is also great on a child's attitude towards the type and pattern of eating. What is learned in class about health and nutritious food must be supported by the food available in the school cafeteria?

Family Diet

The family environment has a very big influence on children, this is because it is in the family that the child gets the first experience in his life. In this case, parents have a strong influence in shaping their children's eating preferences, because parents are the first model seen by children. According to Khumaidi (1994), children's attitudes towards food are influenced by lessons and experiences gained since childhood about what and what to eat. how to eat. The formation of a liking for certain foods is the result of the previous pleasure obtained when they eat

to satisfy their hunger and from the emotional connection between children and those who feed them.

Teen Diet

Based on the results of research by Frank Gc quoted by Moehyi (1992), said that there is a relationship between children's eating habits and body size. Teenage lunches and dinners provide 60% of caloric intake, while snack foods provide 25% of calories. Obese children were found to eat less in the morning and more in the afternoon than thin children of the same age. School children especially during adolescence belong to a period of growth and development both physically and mentally and are sensitive to stimulation from outside. Food consumption is one of the important factors that determine the potential for growth and development in adolescent development.

Types of Foods that Cause *Dental* Caries in Elementary School Age Children

Eating and drinking patterns are children's eating and drinking habits. The types of food commonly consumed that can cause caries to include:

a) According to Ramadhan, (2010) Types of food that can be stuck between the teeth like candy, chocolate, sweet cakes, snacks, sweet chips, meat, and the like. While the type of non-carbohydrate food cariogenic such as rice, corn, instant noodles, potato, sweet potato, cassava, vegetables, beans, and fruit – fruit. Other types of food can be used as a snack like fresh fruit, unsalted popcorn, or nuts.
b) According to Worotitjan, et al (2013). Type drink that is pure drinks (non-packaged) and drinks packaging. Pure drinks such as pure milk, pure tea, pure coffee, pure syrup, pure fruit juices are drinks that are made simply, on a household scale. Packaged drinks such as packaged milk, packaged tea, packaged coffee, packaged syrup, and packaged fruit juice, namely packaged drinks, can be drunk directly without going through the manufacturing process first.
c) According to Rahmadhan, (2010) Consumption of sweet foods on time is free time outside of meals.

It is unthinkable to clean your teeth and mouth after eating, so food is more dangerous than when eaten with main meals such as breakfast and lunch. The frequency of eating more than 3 times per day, such as 20 minutes 1 time eating sweet foods so that tooth decay is faster. Germs will stick to the surface of the teeth because the teeth are not cleaned after eating and plaque is formed which is then converted into acid. Always try to clean your mouth by drinking water White after sweet food enters the mouth.

Factors Affecting the Selection of Types of Food

Factors that influence the choice of children's food types include: (a) Peers (b) Interests, (c) children's behavior and eating routines change when the amount of food is consumed. m will which eaten outside the house more and more, h al this changed because association with peers and follow-up want to feel what their friends are eating (d) Electronic media like clan on television about food accentuate characteristics food includes crunchy, sweet and chocolate flavors so that children want to try. Children are attracted to sweet foods with various colors and shapes such as candies, chocolates, biscuits, and sweet snacks (e) The existence of snack places, in the children's homes and schools, many traders sell various kinds of food, thus creating a desire for children to buy food the.

Type M diet settings to avoid dental caries

According to Ramadhan, (2010) Regulating the type of food so that caries do not occur in a child's teeth is School-based as follows: (a) Calcium Foods Vitamins C and D. (b) Foods containing calcium, vitamin C, vitamin D useful to strengthen teeth. Types of foods that contain the material include milk, eggs, and fruit. (c) Foods containing protein. Eat foods that contain protein because it can inhibit the caries process such as tofu, tempeh, meat, fish, eggs, and nuts. (d) Foods containing nitrate, include vegetables because vegetables contain nitrates. The ingredient can inhibit the work of bacteria such as spinach and lettuce. (e) Fiber foods. Foods that have cleansing power t on fibrous foods. These foods are found in apples, oranges, celery, water guava. This food is good eaten after meals or between meals eat. (f) Arrangement of sweet foods. Set how often and when to enjoy sweet foods. Should be done during main meal times such as breakfast, lunch, and eat night.

O**n the Habit of Brushing Your Teeth**

According to Tamrin, et al 2014). Brushing your teeth is cleaning your teeth from food particles, plaque, bacteria, and reduce not comfort from unpleasant smells and tastes comfortable. The habit of brushing teeth is an activity or routine in terms of cleaning teeth from food debris to maintain dental and oral hygiene and health. By looking at the efficiency of the time and time of eating and the results, the frequency of brushing teeth is good for children is twice a day.

The technique of brushing teeth in children should be a simple and easy-to-understand brushing technique. School-age children usually lack the awareness to pay attention to oral hygiene behavior so that children's dental health decreases. Improved oral hygiene is done by using a toothbrush combined with regular dental check-ups. The age most susceptible to dental caries is the age of 4-8 years in primary teeth and 12-18 years in permanent teeth.

How to brush your teeth

according to Erwana, (2013). How to brush your teeth correctly 4 exactly perfect, where today many are asking how to brush or clean teeth properly and effectively? We only need to remember 4 things, namely the right tool, the right method, appropriate on time, and target. Temporary most people want the only fast thing is that it starts quickly and finishes quickly finally the teeth so fast holes. Right tools _ which used for cleaning teeth, namely toothbrush. The following are the criteria for a good toothbrush, namely that the handle of the brush must be straight so that it is easier to control the brushing movement. The brush head is not wide, the bristles are soft and prevent injuring other soft tissues such as cheeks, gums when brushing the back of the teeth. Toothbrushes should be replaced at least every three months.

Movement movements for proper brushing

Movement for the outside of the front teeth is up and down do not sideways motion back and forth because can be causing gum becomes an irritation. The outside of the back teeth don't rub with up movement down, but with forward/backward or rotate. Up and down movement no Effectively clean the back the outside part. The inside of the front teeth and back must be brushed with an interesting motion. (a) On-time. Brushing your teeth in the morning is done after breakfast, not while taking a shower. except if you take a shower in the morning after breakfast.

Meanwhile, the time to brush your teeth at night is before going to bed, not after dinner. However, there is also a time when brushing teeth should be more than 2 times a day, namely at the time of eating and at bedtime. Brush your teeth for at least 2-3 minutes. On occasions where it is not possible to do so immediately after eating, it is recommended to rinse your mouth with water. (b) Right on target Covers proper cleaning of areas that need cleaning. Teeth aren't only on the front and the outside but the teeth are also on the back and inside. This part is usually not even forgotten to clean, making it easier for plaque to occur.

Equipment That Can Be Used In Dental Cleaning

(Sariningsih, 2012) (Dingwal (2013) the equipment that can be used in cleaning teeth are as follows: (a) Toothpaste. Toothpaste is the most common oral cleaning product used although not significant in plaque removal. Types of Children's Toothpaste are intended to clean and smooth n tooth surface and can give a taste as well as a pleasant aroma in the oral cavity. Toothpaste for children is produced with pictorial packaging and colored. According to Tarigan, (2013). The toxic dose of fluoride for children is 5 mg/kg body weight. Regular toothpaste contains up to 1 mg of fluoride ion per gram of pasta so a full brush head-sized paste contains about 1.5 mg fluoride ion. The use of mouthwash to clean the mouth as part of basic hygiene requires an effective and gentle solution for the patient. Gargle using flour levels. Gargling flour is indicated for children over the age of six and adults who are susceptible to caries. More antiseptic mouthwash cheap and enough effective for children is warm salt water.

Dental floss

The use of dental floss is the method of choice for cleaning the surface of the gap between the two teeth. The dental floss is made of thin bundles or plastic or silk tape which is used to remove food and dental plaque from the teeth. This floss is gently inserted between the teeth and scraped along the sides of the teeth, especially close to the gums.

Dental Definition

Teeth are one of the accessories in the mouth and have varied and many functions. The main function of teeth is to tear and chew food according to Muttagin et al (2010). According to Irma, Intan, (2013). Teeth are tissues of the body's teeth that are very hard compared to others. Its structure is made up of layers of hard enamel, the dentin (bone of the tooth) inside, the pulp which contains blood vessels, nerve vessels, and other parts that strengthen the teeth. However, teeth are body tissues that are easily damaged.

Gear Function

According to Rhamahan, 2010, the functions of teeth are: (a) Masticatory teeth play an important role in smoothing food to make it easier to swallow and ease the work of the digestive process. (b) Speak. Teeth are needed to produce certain sounds or letters such as the letters T, V, F, D, and S. Without teeth, the sound of these letters does not feel perfect. (c) Aesthetics. A smile will not be complete without the presence of a row of neat and clean teeth.

According to Isro'in, Andarmoyo, (2012). Humans have 2 kinds of deep teeth They are baby teeth (primary teeth) and permanent teeth (dental teeth) permanent). Milk teeth are teeth that grow from the age of 6 months which amounts to 20 pieces.

While permanent (secondary) teeth are teeth that gradually fall out, totaling 32 pieces that occur between the ages of 6 and 14 years. The last tooth (molar 3) will erupt at the age of 17 to 21 years. Of the two definitions above, the first definition emphasizes the structure and nature of the teeth, while the second definition focuses more on the types and types of teeth.

All kinds of teeth

Types of teeth include (a). Incisors (*Incisivus*) These teeth are located in the front, shaped like a chisel, and serve to cut food (mastication) and slice food. There are 8 in total, with 4 being in the upper jaw and 4 being in the lower jaw. Milk incisors begin to grow in infants aged 4-6 months, then replaced by permanent incisors at the age of 5-6 years in the lower jaw and the age of 7-8 years in the upper jaw. (b) Canines (Canines)

The position of this tooth is located at the corner of the mouth, its shape is pointed on the side of the mouth tooth incisors, and are the longest teeth in the oral cavity. The function is for slicing food. There are 4 in total with a division of 2 in each jaw, 1 on the left and 1 on the right. Canine milk teeth are replaced with teeth permanent canine at 11 – 13 years (c). Small Molars (*Premolars*)

There are 8 teeth, with 4 in each jaw, 2 on the left and 2 on the Left and right. These teeth are only found in adult teeth and are located the behind canine. Growing up at 10 – 11 years old and taking over of the milk molars. Together with the molars, these teeth function to crush food. (d) Molars (*Molars*) There are 8 primary molars, like premolars, then fall out at age 10–11 years and are replaced by premolars. While permanent molars grow behind the premolars after the primary molars fall out and are replaced by premolars. The number of permanent molars is 12, with 6 on each jaw, 3 on each right and left side.

Definition of Caries

Dental caries is a chronic, regressive process that begins with the dissolution of enamel minerals, as a result of the disruption of the balance between the enamel and its surroundings caused by the formation of microbial acids from the substrate (a food medium for bacteria) which is followed by the onset of the destruction of organic components which eventually leads to cavitation. hole formation) (Kennedy, 2002). Dental caries is a pathological process in the form of limited damage to tooth tissue starting from the enamel and then continuing to the dentin. Dental caries is a major oral problem in children and adolescents, the highest caries period is at the age of 4-8 years in primary teeth and 12-13 years in permanent teeth, because at that age the enamel is still maturation after an eruption, so it is likely to occur. great caries. If you don't get attention, caries can spread completely from other teeth (Behrman, 2002). (a) Types of dental caries According to Widya (2008), based on the place of occurrence: Caries Insipiens, Caries Insipies is caries that occurs on the surface of the tooth enamel (the outermost and toughest layer of the tooth) and does not feel pain, there is only black or brown staining on the enamel.

Superficial Caries. Superficial caries are caries that have reached the deep part of the enamel and are sometimes painful. Media caries is caries that have reached the dentin (dental bone) or the midway between the tooth surface and the pulp chamber. Teeth usually feel sore when exposed to cold, sour, and sweet stimuli.

Deep Caries. Deep caries are caries that have approached or have even reached the pulp, causing inflammation of the pulp. Usually feels pain suddenly without any stimulation. If not treated and patched immediately, the tooth will die, and further treatment will take longer than other caries.

The Process of Dental Caries

The process of dental caries begins with the presence of plaque on the surface of the teeth, sucrose (sugar) from food scraps, and bacteria adhere to a certain time which turns into lactic acid which will lower the oral pH to a critical level (5.5) which will cause enamel demineralization to continue to become Suryawati, (2010) dental caries.

The internal demineralization slowly progresses toward the dentin through the focal hole but not yet cavitation (hole formation). New cavitation occurs when dentin is involved in the process. However, sometimes so much mineral is lost from the core of the lesion that the surface is easily damaged mechanically, resulting in visible macroscopic cavitation. In incipient dentinal caries, only the fourth layer (transparent layer, consisting of sclerotic dentin bone, may form an obstacle to microorganisms and their enzymes) and the fifth layer (opaque layer, in which there is fat in the tubules may be a symptom of degeneration). odontoblast branches). Only after cavitation occurs, bacteria will penetrate the tooth bone. In a very deep carious process, there are no layers of three (demineralized layer, a narrow area, where peritubular dentin is attacked), layer four, and layer five (Suryawati, 2010).

Factors that cause dental caries

According to Yuwono (2003) the factors that allow the occurrence of caries, namely: (a) Age. There are three phases of age seen from the angle of the teeth, namely: The mixed dentition period, where the first molar is most often affected by caries. In the period of puberty (adolescents) aged between 14 years to 20 years at puberty, hormonal changes occur which can cause swelling of the gums, so that oral hygiene becomes less awake. This causes a higher caries percentage. Age between 40-50 years, at this age there has been a retraction or decline in the gums and papillae so that the leftovers are more difficult to clean. Tooth surface susceptibility. Dental morphology, areas of teeth that are prone to plaque are very likely to occur caries.

Dental Environment.

The dental environment includes the amount and content of saliva (spit), the degree of viscosity, and buffering ability that affects the occurrence of caries, saliva protects the tissues in the oral cavity by lubricating the dental elements which reduce grafting wear caused by mastication. classified as inhibited dental elements, bacterial aggregation which inhibits the colonization of microorganisms, antibacterial activity, mechanical cleaning that can reduce plaque accumulation. Saliva. The effect of saliva on teeth has long been known, especially in influencing the hardness of enamel. Saliva is secreted by: parities glands, sublingual glands, and submandibular glands. For 24 hours, salivary glands secrete as much as 1000-1500 ml, submandibular glands secrete 40%, and parotid glands as much as 26%. At night, there is less salivation, mechanically this saliva functions to moisten the oral cavity and chewed food.

The enzymatic properties of saliva are involved in mastication to break down food elements. The relationship between saliva and dental caries has been known

that patients with little or no saliva secretion have an increasing percentage of dental caries, for example, due to radiation therapy for cancer, xerostomia, the client in a short time will have a high caries percentage. It is also often found that patients under 2 years old with damage or caries throughout their teeth, priority gland aplasia, Yuwono, (2003). (b) Bacteria. According to Yuwono (2003), three types of bacteria that often cause caries are Streptococcus. These Gram-positive cocci bacteria are the main cause of caries and are the most abundant in the mouth, one of which is Streptococcus mutant, which can lower the pH of the medium up to 4.3%. The mutant streptococci are mainly populations that consume a lot of sucrose. Actinomyces. All species of actinomyces ferment glucose, mainly forming lactic, acetic, succinic, and formic acids. Actinomyces viscous and actinomyces naesundil are capable of forming root caries, fissures and damaging the periodontium. Lactobacillus. The population affects eating habits, the most preferred site being deep dentinal lesions. Lactobacillus is only considered a contributing factor in the caries process. (c) Plaque. This plaque is formed from a mixture of saliva ingredients such as mucin, remnants of oral tissue cells, leukocytes, lymphocytes with food debris, and bacteria. This plaque is initially formed, so that the liquid which over time becomes chelated, is a place for bacteria to grow. Frequency of eating foods that cause food caries cariogenic. The frequency of eating and drinking not only causes erosion, but also tooth decay or dental caries. Consumption of sweet foods at leisure time to eat will be more dangerous than during the main meal.

Dental Caries Prevention

According to Mansjoer (2009), the management of dental caries prevention done by: (a). Oral care. Oral care is carried out by practicing the following instructions: Brush your teeth at least twice a day at appropriate times, namely after eating, before going to bed, plus after waking up. (b) Choose a toothbrush with soft bristles, a flat surface, and a small brush head. (c) Use dental floss (dental floss) at least once a day. (d) Use an anti-plaque mouthwash containing an antibiotic (vancomycin), an enzyme (destronase), and an antiseptic chlorhexidine 0.1%. For children who are still small and cannot use a toothbrush properly, a cleaning cloth that is not too thin can be used to clean the front and back of the teeth, gums, and tongue. How to use it by wrapping it around your finger and then rubbing your teeth. (e) Visit the dentist at least once every 6 months or if you have chipped teeth, oral sores that persist for more than two weeks, or brush your teeth. (f) Diet. Caries can be prevented by reducing the amount of sugar in the food consumed. Avoid the habit of eating foods that damage teeth (candy, chocolate, and so on) and get used to consuming foods that are healthy for teeth are fruits and vegetables. (g) Fluoridation. Fluoridation is accomplished by allowing the dentist to apply dental cells to the teeth, adding fluoride to the drinking water supply at home, using fluoride-containing toothpaste, or using sodium fluoride tablets, drops, or suction. Dental caries can be avoided/prevented if children take proper dental care after consuming cariogenic foods.

Tooth

Teeth are one of the organs of mastication which consist of teeth on the teeth upper and lower jaws, the teeth consist of three parts, namely the crown of the tooth, tooth root, and tooth neck. Milk teeth start to grow when the baby is 6 months old After the baby is up to 2 years old, all the 20 teeth have been grow perfectly (Ircham, 2003) (a) The process of tooth formation

begins when the canine is one and a half months old in the mother's womb, vitamins, minerals. Especially calcium and phosphorus which are needed for the growth and development of baby teeth are taken automatically from the mother's bloodstream because they are important for the health of the mother and baby (Rahmadhan, 2010). Foods that contain lots of calcium and phosphorus include milk, cheese, meat, fish, eggs. However, if consumption in daily food is felt to be lacking, it can be added by consuming drugs containing those given under the supervision of a doctor (Rahmadhan, 2010).

The shape of the teeth differs according to their function, incisors for cutting teeth smooth the pointed canines for holding and tearing, molars for food. According to Mansjoer (2009), although the shape is different, all have the same arrangement, the teeth consist of: (a) Dental crown (clinical crown) The part that protrudes above the gums, while the anatomical crown is the part of the tooth that is coated with enamel. (b) Root of the tooth. The part that is buried in the alveolus in the maxillary or mandibular bone. (c) Neck teeth.

Previous Research

Based on research conducted by Syafitrih A. Hamid Rina Kundre Yolanda Batalha. Regarding the relationship between diet and dental caries in fourth-grade children aged 8-9 years at SD Negeri 126 Manado, Environment 1 Kleak, Malalayang District, Manado City, North Sulawesi Province. With the results of the distribution of the frequency of eating patterns as follows: Variable Diet is 49 people or 90.7% in the poor category, good category 5 people or 9.3%,

Cases of dental caries with the category of suffering from dental caries cases 47 people or 87.0%, and no dental caries 7 people or 13.0%. Previous research conducted by Siti Alimah Sari on the relationship between brushing teeth and the incidence of dental caries in school-aged children in grades IV-VI at SDN Ciputat 6, South Tangerang, Banten Province in 2013 with the following results: Dental caries in school-age children at SDN Ciputat Angering Selatan in 2013. The results showed that there were 27 students (33.3%), and 54 students (66.3%). The number of students who have dental caries is quite high. The large percentage of students who experience dental caries caused by sweet foods, but also this condition is influenced by several factors including the proper and correct way of brushing.

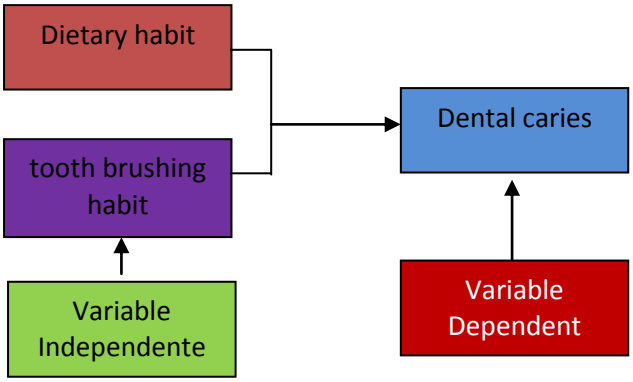
Framework of thinking

Cases of dental caries at the age of children can be caused by factors in eating patterns and brushing teeth. For the dietary factor, because at that age children like to choose foods that contain elements of sugar such as chocolate and others so that they can cause dental problems. To avoid the behavior of choosing foods that contain sugar, education from parents or school teachers is urgently needed with frequent frequency.

Then on the factor of brushing teeth in school-age children, it is very necessary for terms of brushing teeth in one day, they must brush their teeth in the morning and evening in the sense of before and after eating. If the tooth brushing behavior is not adequate, then the food debris left between the teeth will rot and decay easily and it is easy to develop dental caries. Education is urgently needed by both parents and family for guidance and direction so that the bias of dental problems is reduced.

Research Concept Framework

Based on the description of the literature review above, the researcher can describe the research conceptual framework as follows:



Research design

Based on the research objectives, the design built with The method of cross-sectional study is quantitative analytic, using the Guttman scale. This form of study is measured only once by utilizing an interview (Sastroasmoro and Ismael, 2011).

Research Population

Target Population**,** What is meant by the target population is all EBC school children in Suco Liurai Posto Administrativo Aileu Vila Municipio Aileu. Affordable Population The affordable population is all EBC school children in Suco Liurai**,** Posto Administrativo Aileu Vila Municipio Aileu aged 10-15 years with a total of 90 people. Inclusion Criteria; EBC schoolchildren, School children 10-15 years old, Gender is male and female**.** Exclusion Criteria; What is meant by exclusion criteria are among others: a). Schoolchildren who refuse to be interviewed. b). Prospective respondents suddenly enter the hospital

Research Sample Size

The size of the research sample for Analytical Quantitative with Cross-Sectional Study method. Determination of the number of samples, because the number of population is limited so that researchers can take the entire population as a research sample. The sampling technique was non-random sampling and purposive sampling. In total, the sample is 90 elementary school students.

Research Instruments

In *cross-sectional analytical* research, researchers can use

The Research Instrument (List of Questions) contains for all variables, 25 question items with 10 question items for each variable, diet pattern and 10 question items for brushing teeth with 15 question items, for the case of dental caries, 1 question item with a total of 26 question items Can use the *Guttman Scale*, cannot be tested for validity and reliability due to limited time and research funds.

Data Collection Procedure

The data collection technique in this research is using a questionnaire, which is a data collection technique by providing or distributing a list of questions to respondents in the hope of responding to the list of questions. The data obtained are primary data, where the questionnaire sheet is filled in by the respondents themselves. (a) The researcher asked for a letter of permission from the UNPAZ Postgraduate Study Program (b) The

researcher came to the EBC School of the Liurai Tribe to ask for permission and provide an explanation of the research to ka. Liurai Tribe EBC school. (c) Distributing Informed Consent (d) Researchers give questionnaires to respondents who have determined at the time of the study. (e) Researchers provide explanations to respondents on how to fill out the questionnaire and assist during filling out the questionnaire. (f) Remind respondents to fill in all questions completely and when they are finished they are collected immediately. (g) The researcher took all the questionnaires that had been collected. (h) The researcher examines the respondent's teeth (i) Checks and records caries found in the respondent. (j) Scoring data. (k) Data tabulation.

Research Location and Time

1) The location of the study was carried out by the EBC School of Suculaluai Posto Administrativo Aileu Via Municipio Aileu.

2) Research time will be held in November 2018

Data Analysis Techniques

In the data analysis technique section, researchers can use Cross-Tabulation with a 2 X 2 table and test the (RP) Ratio Prevalence 95% Confidence Interval Lower and Upper.

RESEARCH RESULTS AND DISCUSSION

Overview of Research Sites

The Municipality of Aileu is part of the 13 municipalities that exist throughout the territory of Timor-Leste. The research location is located in the Aileu Sub-District of the city. It is administratively divided into 11 Sucos and 62 Aldeias and has a population of 20,830. According to the area of the Municipio Aileu 13 square kilometers. Population density 275 *(DNE ho UNFPA 2011).*

Table 1: Distribution of Characteristics of Respondents Based on Age and Gender in Dental Caries Cases at EBC Elementary School, Liurai Tribe

Characteristics	Dental Caries (Y)		Total N(%)	*P Value*
	Yes N(%)	Not N(%)		
Age group				
o 10 – 12 Years	33 (75.0)	11 (25,0)	44 (100)	0.727
o 13 – 15 Years	33 (71.7)	13 (28.3)	46 (100)	
Gender				
o Man	31 (72.1)	12 (27.9)	43 (100)	0.799
o Woman	35 (74.5)	12 (25.5)	47 (100)	

Source: Primary Data

Distribution of respondent characteristics by age group and gender Gender in EBC Elementary School Children of the Liurai Aileu Vila. Tribe

Based on the results of the Cross Tabulation in table 1, it shows that there are 33 elementary school children aged 10-12 years who suffer from dental caries and 11 (25.0%) do not suffer from dental caries, while those aged 13–12 years do not suffer from dental caries. 33 (71.7%) of 15 years who suffered from dental caries and 13 (28.3%) did not suffer from dental caries. In the same table by gender, it is shown that male EBC children suffer from dental caries as many as 31 (72),1%)

while women who suffered from dental caries 35 (74.5%) when compared with those who did not suffer from cases of dental caries only had a value of 27.9% and 25.5%, more EBC children suffered from dental caries.

Table 2: Distribution of Determinant Factors on Cases of Dental Caries in EBC Elementary Children of the Liurai Tribe Aileu Vila

Variable	Dental Caries (Y)		Total N(%)	Mark RP	*95% CI*	
	Yes N(%)	Not N(%)			*Lower*	*Upper*
Diet (X1)						
o Yes	44 (66.7)	22 (33.3)	66 (100)	0.727	0.590	0.896
o Not	22 (91.7)	2 (8.3)	24 (100)			
Brush Teeth (X2)						
o Yes	61 (95.3)	3 (4,7)	64 (100)	4.9	2,250	10.916
o Not	5 (19.2)	21 (80.8)	26 (100)			

Data source: Primary Data

Distribution of factors related to cases of dental caries in Aileu Vila. EBC Elementary School children

The results *of the Cross-Tabulation* in table 2 above show us that from the variables studied and tested, it turns out that rubbing behavior is a risk factor with (RP) *Ratio Prevalence* being 4.9 95% CI Lower 2,250 Upper 10,916, while the dietary pattern variable is not a risk factor. on cases of dental caries in primary school children Aileu because the value of RP: 0.727 95% *CI Lower* 0.590 *Uppe*r 0.896

DISCUSSION

1) Dental caries is a chronic regressive process starting with the dissolution of enamel minerals, as a result of the disruption of the balance between the enamel and its surroundings caused by the formation of microbial acids from the substrate (Kennedy 2002).

2) Characteristics of Respondents include age group and gender. The results *of the Cross-Tabulation* showed that of the 90 elementary school children we interviewed, aged 10-12 years, 33 (75%) suffered from dental caries, while 33 (71.7%) suffered from the same case.) when compared with the research results of Winahyu M. and his friends in Indonesia 2019 with the age of 6 years 65 people (39.9%) 7 years 89 people (54.6%) 8 years 9 people (5.5%) there is a different age in Timor-Leste Aileu cases of dental caries attack at the age of 10-15 years because the results of the study showed inadequate tooth brushing behavior reached 61 (95.3%) with RP value: 0.727 95% *CI Lower 0.590 Upper* 0.896, while in Indonesia Age is easier compared to Timor-Leste ranging from 6-8 years due to the level of consumption of cariogenic food in the high category of 80 people Characteristics of respondents based on the sex of men suffering from dental caries according to the cross-tabulation results as many as 31 people (72.1%) while the gender of women suffering from dental caries as many as 35 people (74.5%) shows that the female sex suffers more cases the same. When compared with the results of a research according to Winahyu et al (2019) in Indonesia the female sex remained with 84 people (51.5%) suffering from dental caries cases while only 79 people (48.5%) the difference between the two locations study.

3) Determinant factors of dental caries based on the tabulation results in table no. 2 above, it is shown that of the two variables that are considered to be risk factors for the occurrence of dental caries, it turns out that the factor of tooth brushing behavior is a risk factor with Prevalence Ratio (RP) values of 4.9 and 95% Confidence Interval Lower 2.250 and Upper 10,916, while the variable of diet in SD EBC Aileu Vila children is not a risk factor for dental caries cases with RP 0.727 95% Confidence Interval Lower 0.590 Upper 0.896. When compared with the results of the hypothesis that: the habit of brushing teeth is proven by the results of the Ratio Prevalence test with a value of 4.9, 95% with Convidencail Interval Lower 2.250 and Upper 10,916.

CONCLUSIONS AND SUGGESTIONS

5.1 Conclusion

After the results of this study were tested, it turned out that the tooth brushing behavior was a risk factor for cases of dental caries in elementary school children EBC Aileju Vila with a Prevalence Ratio value of 4.9 with 95% Confidence Interval Lower 2.250 Upper 10,916

5.2 Suggestions

On this occasion, the research humbly advises the DHS Municipio Aileu specifically for the Aileu Vila Sub-District to improve dental health promotion, especially dental cleaning behavior.

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